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Diary Dates

March 13
Foundation Lecture: Dr Alex Sakula on "Asthma cures, Ancient and Modern"

May 6
Professor G. R. Paterson — "No Better Float Through Posterity"

September 24
British Pharmaceutical Conference, Jersey.
History of Pharmacy Session, 2pm.

Spring Conference, at The Maids Head Hotel, Norwich, which is a ten minute walk from the railway station. Rooms have *en suite* bath/shower, telephone, radio, colour television and tea and coffee making facilities. There is also a 24-hour room service.

Provisional Programme
Friday, April 11

6.30 p.m.	Sherry Reception President's welcome to Norwich
7.00 p.m.	Dinner
After Dinner	"Norwich". Mrs B. Miller

Saturday, April 12

9.15 a.m.	"Carl Schmidt's vilification of von Kölliker and Löwig over the chemical composition of Tunicata shell". Dr. D. B. Jack
10.00 a.m.	Coffee
10.30 a.m.	"Norwich life in the 18th Century". Mr. J. G. Kilmartin
11.15 a.m.	"Eighteen on Loan". Miss K. Arnold-Forster
11.30 a.m.	ANNUAL GENERAL MEETING
12.30 p.m.	Lunch
Afternoon	Free
7.30 p.m.	Dinner
After Dinner	"Knappers Rot". Dr. A. Batty Shaw

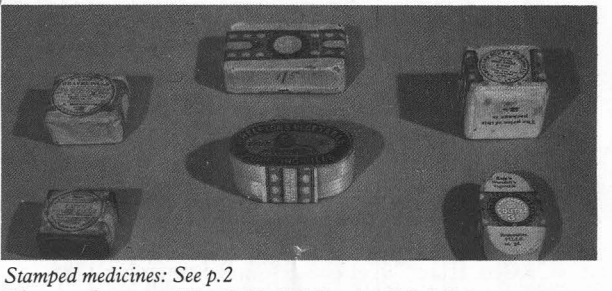
Sunday, April 13

9.30 a.m.	"The Norwich Quakers — Some Links with Pharmacy and Medicine". Mrs. M.H. Phillips
10.15 a.m.	Coffee
10.45 a.m.	"The Iceni Pharmacy". Mr. J. O. Newstead
11.30 a.m.	"A History of Mustards in Pharmacy and Medicine", Dr. W. E. Court
12.30 p.m.	Lunch

Cost £82 per person sharing a twin or double room. £88 per person in a single room. Non residential, morning sessions only including lunch £14 per person per session.

Co-opted
At the February committee meeting it was agreed to co-opt Mr H. Burlinson to serve on the committee and in accordance with the constitution, as amended last year, he will be entitled to serve for a period of three years.
Mr Burlinson has been a supporter of BSHP for many years and is an active member of the Pharmaceutical Society especially in the industrial sphere.

Bankers Orders and Subscriptions
Will members who pay their subscriptions by a Bankers Order, please ensure their instructions are up to date. The current subscription fee is £5. Failure to do so causes problems at York Place and headaches for the Treasurer.



Stamped medicines: See p.2
(Photograph courtesy Miss P. North, Librarian P.S.G.B.)

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The Medicine Stamp Acts of Great Britain

By Leslie G. Matthews

No nation can successfully fight a war on three fronts. Britain's wars with her Colonies in America, with Spain and with France during the last quarter of the 18th century brought her almost to bankruptcy. When peace was finally made with all three opposing Governments the Treasury coffers were practically empty. Under Pitt as Prime Minister, the Chancellor, Lord John Cavendish, was desperate for funds. Taxes were imposed upon a variety of merchandise, upon servants, mules, carriages, dogs, clocks, watches, anything in fact, that might bring in money to the Exchequer.

It is not surprising therefore that medicines came in for taxation. No doubt it was the intention that this tax should be temporary but, as is the case with so many taxation ideas, once they are imposed it is hard to give them up. This tax lasted for 158 years, from 1783 until 1941.

1. **1783.** The first Act (23 Geo. III, c. 62) imposed upon "Vendors and sellers of Medicines in Great Britain", including those medicines which had been patented, the obligation to take out an annual licence. The cost of this licence was £1. per annum in London and Westminster and in the penny postal area; elsewhere it was only 5 shillings per annum.

   Three classes of sellers of medicines were exempt from licence — those persons who had served a regular apprenticeship to any Surgeon, Apothecary, Druggist or Chymist; those who had kept a shop only for the sale of drugs and medicines for three years before the Act; and the Surgeons who had served in the Navy or Army and whose commissions had been registered.

   The medicines sold had to bear a stamp indicating that duty had been paid before sale. The duty was 3d. when the face value was under 2s.6d; 6d. if the value was from 2s.6d. to 5s; 1s. for values over 5s.

   Sellers of medicines on which the duty was imposed had to send their wrappers, covers or labels, with the proper amount of tax, to the Commissioners of Stamps for stamping. Penalties were imposed if fraud was proved e.g. re-using stamped wrappers previously used, or for failure to stamp the medicines. If because of information given by common informers the offender was fined, the amount of the fine was shared equally between his Majesty the King and the informer.[1] The Act became effective on 1st September 1783.

   No one likes paying taxes and the sellers of drugs and medicines were no exception. Imported drugs already paid import duty, imposed from 1660, and there was much outcry against the new taxation. The public would now have to pay more or the seller would get less profit. It became obvious that some amendment to the 1783 Act must be made.

2. **1785.** Only two years later, in 1785, the whole of the 1783 Act was repealed but was followed by a new Act, (25 Geo. III, c. 79) effective from 1 September 1785. This new Act, in general imposed the same kind of obligations upon sellers of medicine but *exempted* from duty certain classes of medicines:

   (1) The medicines specified in the *First* Book of Rates which had operated from 1660 and was part of the means to raise money for Charles II when he had been restored to the throne of England. (This Book, really a list of import duties, imposed an import duty upon a whole range of natural drugs, balsams, roots, barks, seeds, etc., and upon chemicals such as alum and white lead; almost upon all materials commonly used by spicers, druggists and apothecaries. The rate of duty on each was related to its value. The list included a few made-up medicines such as Pomegranate pills and Orange flower ointment. If drugs were imported directly from the place where they were grown, and in British ships, only one-third of the normal duty was payable.[2]

   (2) Medicines specified in the *Second* Book of Rates, 1724, this changed the rates of duty upon certain drugs named in the *First* Book of Rates, and added others.[3]

   (3) Entire drugs, i.e. uncompounded and unmixed drugs.

   (4) Preparations sold by exempted persons, provided the "Properties, Qualities, Virtues and Efficacies are *known admitted and approved*" in the prevention or treatment of human ailments. (As we shall see later, this exemption of "known admitted and approved" remedies was of great use to British pharmacists during the first 40 years of this century.) This exemption could be granted if the seller made no claim to exclusive right in making the preparation and if the preparation had not been patented. The grant of a patent was in itself a claim to exclusivity.

   The medicines taxed under this Act were defined as medicines for use externally or internally affecting the human body.

   The duties were the same as those in the 1783 Act except that those medicines having a value of less than 1s. now paid 1½d. duty instead of 3d.

   The cost of licences was the same as before except that sellers in Edinburgh now had to pay the same as those in London, viz. £1 per annum.

   There was one new matter of importance — to prevent avoidance of licence and stamp duty, every preparer of medicines liable to duty had to give notice of the place where he intended to make them, i.e. registration of premises, and to give the names of the preparations and the prices at which they were to be sold. A new Schedule was attached to the Act but this was for guidance and was certainly not definitive. Some 87 Drugs, Oils and Waters were listed, among them well advertised proprietaries like Bateman's Drops, Daffy's Elixir, Beaume de Vie, Jesuit Drops, Stoughton's Elixir and Turlington's Balsam.

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Illustration courtesy of Miss P. North, Librarian P.S.G.B.

3. **1786.** A further Act of 1786 (26 Geo. III, c. 49) imposed obligations upon chemists and druggists. This made scents, perfumes, cosmetics and dentifrices taxable on the same lines as medicines. The annual licence to sell these was only one shilling. Persons licensed had to have the words "Licensed to deal in Perfumery" on the front of their premises. The range of duties was much the same as for medicines and wrappers had to be sent to the Commissioners for stamping. Almost 200 items were listed as liable to tax. Some could be kept in bulk however, and became dutiable only when they were sold: these included Almond Paste, Bears Grease, Cold Cream, some Soaps and Wash Balls.

   The cost of collection of the amounts paid for annual licences and the stamp duty became so high in relation to the receipts that the Act was repealed as from 5 July 1800.

4. **1802.** In 1802 came yet more changes concerning medicine duty. The Act of 1785 was repealed and a new Act (42 Geo. III, c. 56) was passed, effective from 1 September 1802. This stated broadly, "Upon every Packet, Box, Bottle, Phial or other inclosure, containing any Drugs, Herbs, Waters, Essences, Tincture, Powders or other Preparations or Compositions *whatsoever* used or applied externally" as human medicines, sold in Great Britain, there must be a duty stamp affixed. The details were as follows:
   1. Stamp duty was the same for the lower value medicines. For the higher values there were changes, viz. over 2s. to 4s. — 6d; 4s. to 10s. — 1s.; 10s. to 20s. — 2s.; 20s. to 30s. — 3s.; 30s. to 50s. — 10s.; over 50s. — 20s.
   2. The duties were not payable on those items listed in the *First* and the *Second* Books of Rates.
   3. The Stamp duties were payable by the owners or first sellers, whether these were wholesalers or retailers and whether for home or for foreign buyers.
   4. Exemptions continued for the special classes, e.g. those who had served apprenticeships to Surgeons, chemists etc. (The exemption for those who had kept shops for the sale of medicines only no longer applied.)
   5. The exemptions continued for the known admitted and approved remedies provided no proprietary right was claimed in them.
   6. The cost of annual licences in London, in the area of the two-penny post, and in Edinburgh was now raised to 40s. In other large towns it was 10s.; elsewhere it remained at 5s.
   7. Heavier penalties were to be imposed for fraud, for removing stamps from packets, etc. Informers were still encouraged to report cases of fraud.
   8. The makers could now get duty stamps from the Commissioners instead of sending their wrappers to the Commissioners for stamping — the trade had obviously grown too large for the wrappers to be sent for stamping.
   9. The obligation to send prior information about the intention to manufacture medicines and the names of the medicines was continued.
   10. The Act was to apply to all articles named in the Schedule and to all similar articles.

   The Schedule to this Act brought within the dutiable list foreign medicines except those covered by the import duties imposed by the two Books of Rates. Then followed a list of over 500 specialities liable to stamp duty. All the well known proprietaries were included. e.g. American Alterative Pills, Lip Salve and Dentrifices; Eau de Luce; Edinburgh Ointment; Elixir of Lurquerty or Swedish Preservative; Goulard's Extract; Garavani's Styptic; le Cour's Imperial Oil; Lozenges of Blois. The last-named were the Lozenges first made by Charles Angibaud.

   This Act brought forth vigorous protest from apothecaries and from chemists. Many common remedies like Tincture of Turkey Rhubarb were now to be taxed. Speedily a new Association of Apothecaries and Chemists was formed and a petition to Parliament prepared. Though this petition, published in 1803, did not result in total repeal of the Act, many clauses were modified or removed in two successive years.

5. **1803.** A modifiying Act was passed in 1803 (43 Geo. III, c. 73). This new Act made it more difficult for the informer: no legal action could be started without the authority of the Attorney General. The Schedule of medicines liable to duty was revised — it was far less lengthy than the earlier Schedule. One new feature was that parcels containing 12 packets of medicines liable to duty must now bear the word MEDICINES and any such packet, or any packet likely to contain medicines could be opened by any magistrate if there was a suspicion that there was avoidance of duty.

6. **1804.** Again a *new* Act to repeal the old duties and to impose new duties (44 Geo. III, c. 98.) This was effective from 10 October 1804.

   (1) Schedule A confirmed the cost of annual licences to make and sell proprietary medicines (2) New rates of duty were specified:

   Not exceeding 1s. — 1½d.

Over 1s.	and not exceeding 2s.6d.	— 3d.
Over 2s.6d.	and not exceeding 4s.	— 6d.
Over 4s.	and not exceeding 10s.	— 1s.
Over 10s.	and not exceeding 20s.	— 2s.

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Over 20s.	and not exceeding 30s.	— 3s.
Over 30s.	and not exceeding 50s.	— 10s.
Over 50s.	and not exceeding 70s.	— 20s.

(3) The Schedule of Drugs was revised and now included all foreign medicines, except drugs. About 550 medicines were named, and in addition *all* similar preparations *if* proprietary rights were claimed *or* which had been or shall be publicly advertised in newspapers or by hand and were held out as remedies. The exemptions previously stated, i.e. Those drugs within the two Books of Rates; also those in which *no* proprietary rights were claimed and those "known admitted and approved." The exemption continued for those who had served a regular apprenticeship to Chemists, druggists and surgeons, etc.

7. **1812.** Still a further Act to amend the 1804 Act. (the 1804 Act was 52 Geo. III.) Again the Schedule of drugs liable to duty was amended. There was a new exemption — for those selling artificial or other mineral waters *if* they were to be drunk in the houses or shops of the manufacturers or sellers; if not so consumed, the sellers were to take out a medicine licence and were to see that if sold in bottles, the labels or covers must bear a medicine stamp. Medicinal waters and artificial and aerated waters came within the Schedule. The usual exemptions continued. This Act became known as the principal Act relating to Stamp Duties on Medicines.

8. **1815.** 11 July 1815 an Act to repeal certain Stamp Duties and to grant others in lieu. 55 Geo. III, c. 184. Section 54 of this Act exempted Ginger and Peppermint Lozenges and other Confectionary if they were not sold as medicines. No medicine licence was required for selling the exempt lozenges.

   There was evidently much misunderstanding about the interpretation of the right to sell lozenges free of duty. Many chemists had been selling them by weight without affixing Medicine Stamps. Informers brought legal action through the Commissioners of Stamps who ordered penalties to be paid, the informers receiving one-half. This caused so much trouble to the chemists and druggists that 14 years later, in 1829, the Committee of the Druggists Association, which had not met since 1802 (27 years before) now decided in December 1829 to form a new Society — to be called 'The General Association of Chemists and Druggists of Great Britain'.

   Their main object was to obtain a *judicial* ruling on the Medicine Stamp and Licence Acts. Petitions were prepared for presentation to Parliament but an alteration in the law satisfied the Association which then disbanded.

9. **1833.** 9 August 1833. An Act to prevent the selling of forged Stamps and to exempt from Stamp Duty *artificial mineral waters* in Great Britain. (3&4 W. IV c. 97.) This was effective 10 October 1833.

   Section XX of this Act amended the Act of 1812 by making it no longer necessary to affix Medicine Stamps to "all artificial Mineral Waters, and all waters impregnated with Soda or Mineral Alkali or with Carbonic Acid Gas, and all Compositions in a liquid or solid state to be used for the Purpose of compounding or making any of the said Waters".

   Many medicine proprietors began to advertise to the public that the appearance of the Medicine Stamp on the packs of their medicines meant that the Government had actually approved the preparations. The practice grew rapidly: it was so far from the truth that in 1885 it was ordered that the words: NO GOVERNMENT GUARANTEE be added to the wording on the stamps[4], to make it quite clear to the public that there was no Government approval of any particular medicine. In fact, in 1887, this wording appeared no less than 4 times on the Medicine Stamp.

   It was during the second half of the 19th century that proprietors of medicines requiring a stamp were able to have their own names printed upon the stamps, a small extra charge being made for this operation. This continued down to the cessation of the use of the stamps.

10. No further medicine stamp legislation appeared until 1875 when a uniform payment of 5s. per annum was fixed as the charge for a licence to sell stamped medicines. This superseded the previous licence fees charged according to whether the seller lived in London, Edinburgh or in one of the larger towns or cities.[4]

11. **1915.** Finance Act, No.2. Geo. V, c. 89.
    The system of taxing proprietary medicines continued without change until 1915 when the stamp duties were doubled, i.e. on sales of medicines with a face value of 1s., the duty rose from 1½d. to 3d., and so on in proportion.

    The Act was effective from 21 October 1915. As might be expected, many anomalies arose out of the administration of the many Acts relating to the Medicine Stamp Duties. The officers of the Customs & Excise ruled that if ailments or diseases were mentioned upon the labels or packing material, duty was payable; if the organ of the body was stated, *no* duty was to be paid even if the medicine was to the same formula. Thus — Headache Powders were dutiable but *not* Head Powders. Cough Mixture was dutiable but *not* Chest Mixture, etc. Penalties for evasion were increased.

    In 1903 there was a legal action that had a far-reaching effect upon the sale of remedies by pharmacists in Britain. It will be recalled that in 1785, the year in which the *second* Medicine Stamp Act was passed, there was an exemption from duty of recommended medicines sold by persons who had served a regular apprenticeship to chemists and druggists, amongst others, and that this applied to medicines whose properties are *known admitted and approved* in the prevention or treatment of human ailments. In 1903 this was put to the test by William Glyn Jones, a pharmacist then practising in London. (Glyn Jones, later Sir William, became Secretary of the Pharmaceutical Society of Great Britain and a Member of Parliament.) Glyn Jones purposely sold Ammoniated Tincture or Quinine, prepared according to the current *British Pharmacopoeia* and labelled it "A well known and highly recommended remedy for influenza and colds". He determined to find out whether the exemption granted by the 1785 Act (which was continued in 1812) could still be operative. The local Inspector of Customs and Revenue said the *recommendation* as a remedy made the preparation dutiable and that a Medicine Stamp ought to be affixed

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to it. The case went to the Divisional Court where it was finally determined that the exemption of *known admittted and approved* remedies was still effective and that as this preparation was in the *British Pharmacopoeia*, a known and admitted book of reference, and as *no* proprietary rights were claimed by the seller (such as "Made only by X") no Medicine Stamp was needed. This was a decision important to every practising pharmacist.

After this, provided a pharmacist could get his formula for a medicine registered in a Book of Formulae that was 'Approved' and he claimed a proprietary right in the preparation he could sell it without paying to affix a medicine stamp to the packing. Pharmacists soon took advantage of this.[5] Hundreds of formulae were promptly registered for publication in *Pharmaceutical Formulas* (A recognised book of Reference), and no duty became payable if such a preparation was recommended as a remedy.

The *Chemist & Druggist*, London, in reporting the case said: "Farmer v. Glyn Jones will live in history until as long as the Medicine Stamp Act last". In fact, they lasted until 1941.

From 1900 onwards there had been much agitation about the necessity to ensure that proprietary medicines should disclose their formulae upon the labels. This was held to be for the protection of the public who were being bombarded with circulars and advertisements recommending self-medication. The British Medical Association took an active part in demanding that formuale be stated. They had numerous medicines analysed for this purpose and published two books of analyses of proprietory medicines, between 1909 and 1912.[6] Parliament was asked to promote legislation to make disclosure of formuale compulsory. Time after time the proposals were made but it was not until World War II and the passage of the *Pharmacy and Medicines Act of 1941* that disclosure upon labels or packs of the active ingredients, with quantities of each, of every medicine for human use became compulsory. From that time no Government stamp or duty was payable and no licence to sell proprietary medicines was needed. It should be added that both before this 1941 Act and after it, restrictions were placed upon advertising medicines to the public for the cure or relief of certain diseases such as diabetes, cancer, etc., and that restrictions upon the kind of claims for medicines apply to general advertising to the public by any media, including radio and television.

Summary

The first legislation in Great Britain imposing an internal tax upon proprietary medicines was in 1783. An annual licence to sell such medicines was necessary. Thereafter amending legislation was enacted at intervals until 1915 and the resulting laws were in force until 1941 when the system terminated. The Pharmacy and Medicines Act of that year made it compulsory for the disclosure of the names and quantities of active ingredients of all medicines for human use on the labels or containers. The taxation was discontinued only to be followed later by Purchase Tax and Value Added Tax legislation.

Footnotes

1. There was no organised police force; still less inspectors of pharmacies, and the Government relied greatly upon common informers to report what they considered were infringements of many Acts of Parliament. The informer usually received up to one-half of the penalty recovered and this was written into many of the Acts. For some informers this provided a constant income.
2. The Book of Rates, signed by Sir Harhottle Grimston, 12 Car. II, 1660.
3. The Second Book of Rates, 11 Geo. I, c. 7. 1724.
4. Customs & Revenue Act 14 June 1875 — 38 Vict. c. 23.
5. It should be recorded that attention had earlier been focussed upon this exemption by a barrister, Mr. George Price, who in 1830 published a small book *Abstracts of the Medicine Stamp and Licensing Acts.* He successfully defended some chemists in legal actions but the exemption was never really thought to be of importance until the Glyn Jones action was brought.
6. Secret Remedies; what they cost and what they contain. London, 1909; and *More Secret Remedies.* London, 1912.

References where not given above:

The Statutes at Large. London, various dates.
Public General Statutes. London, various dates.
Report — Select Committee on Patent Medicines, 1914.
Year Book of Pharmacy. 1908, pp. 385-88.
The Proprietary Medicines Bill. *Pharm.J.* 1920, *105*, 136-7.
Rowsell, P.F. The Control of Pharmaceutical Specialties. *Pharm.J.* 1924, *113*, 134-7.
Chapman, H.E. Proprietary Medicines — The Present Position. *Pharm. J.* 1955, *175*, 207-9.

"Beef-Tea"

by Hereward Davies

Mr Davies says that he was severely bitten by the 'writing bug' a good many years ago but could not seriously think of a book until he retired nearly 20 years ago. He is now 83. Hereward Davies worked for Lord Vestey for four years in Hamburg, and then was on contracts in South America for 36 years. He knows the sub-continent well including Cape Horn and Tierra del Fuego. He has a story to tell here which is of interest to pharmacists.

At the river port of Fray Bentos in Uruguay, on a slightly elevated site, there stood only a few years ago (1976), and perhaps still stands, a tiny Protestant church and churchyard in which the gravestones mostly bear German names. Their presence can be linked with the great chemist Justus von Liebig (1803-73).

After studying chemistry at Bonn and Erlangen, in 1822 with a grant from the Hessian government, Liebig went to Paris for further experience in Gay-Lussac's laboratory. As is well known on his return to Germany he laid the foundations of the new discipline of organic chemistry, and established his famous laboratory at Giessen. In 1844 Liebig introduced to the public a nutritious beef-tea known as Extractum Carnis. It had however the great disadvantage of requiring the supply of large numbers of animals for a relatively small quantity of extract. Looking for a cheap and abundant source, Liebig learnt that thousands of cattle were slaughtered in South America merely for their hides and the tallow, whereupon he determined to set up a plant there

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which would produce an extract of meat to his formula and standard of quality.

For this project he chose a man called George Christian Giebert who was briefed by Liebig in Munich. The product of the trial plant was so satisfactory that it was decided to proceed further. An estimated £25,000 was required for factory, cattle paddocks and a meat-salting establishment. The European centre for South American cattle products in those days was Antwerp, and it was there that Giebert came to terms with the Gunther brothers and Corneille David in the formation of the "Société de Fray Bentos, Giebert et Cie." Land stocked with 6,000 cattle was bought and buildings erected, and from the Fray Bentos wharf meat extract and hides went by ocean-going vessels to Antwerp, while bone-meal, blood fertilizers, smoked tongues and salted beef went to local or overseas markets.

Demand for the extract increased with the lower prices, and expansion became necessary. The Gunthers and Corneille David were already established in London, then the world's financial centre, so they registered there as "Liebig's Extract of Meat Co. Ltd." in 1865, and raised sufficient money to buy £45,000 worth of machinery in Glasgow, and cover the costs of offices, staff quarters and more land, as well as provide working capital. In those days the cattle were not paid for through the Banco de la Republica but in gold. Periodically the Bank of England would send out consignments of bullion boxes each containing 5,000 sovereigns, and the cattle buyers would go out on their missions with saddle-bags stuffed with gold coins.

Giebert recruited engineers in Glasgow but administrative, technical and trainee staff must have been sent out by Antwerp and London, and the records of the old Anglo-Frigorifico, which eventually sold out to the Uruguayan government, contain references to the German chemists. A European type village and a manager's house of almost baronial style were built near the factory whilst the early history of the South American Missionary Society shows that in 1874, the chaplain, Rev. Shimield, who was based on the town of Salto spent most of his time in Fray Bentos.

Giebert died in 1874 and his successor was an English cattleman named Charles H. Croker. He persuaded London to launch out into extensive purchases of cattle land. Croker had worked for a while in Chicago in order to learn meat-canning and when a canning plant failed 12 miles up river from Fray Bentos he bought it. By the end of the 19th. century "Fray Bentos" corned beef was on the market. The next thing was the Oxo cube which was an instant success, but the Great War broke out in 1914 and Antwerp was lost. Steps were immediately taken to form Oxo Ltd., in London for U.K. operations under the chairmanship of Lord Hawke. The Antwerp establishment, although a subsidiary of London, had also still acted as testers, packers and distributors of the Meat Extract, and with the jars sold to the public went small picture cards not unlike cigarette cards.

Fray Bentos supplied to the services in the 1914-18 War 200 million tins of corned beef and 100 million Oxo cubes. A few years afterwards the Fray Bentos factory was sold to other British interests. The "Fray Bentos" trade mark however was retained for the operations in the Argentine and Paraguay. Liebig's Extract of Meat had already lost its leadership in this particular world market.

Placental Passage of Drugs* Pre-20th Century Evidence

By B. Jack and Wendy Smith

Introduction

The placenta has been the object of interest and keen study since the earliest times. Because of its connection with birth, many societies have attributed to it magical powers. Some authorities believe that the earliest reference to the placenta is contained in Abigail's words to David when she speaks of "the bundle of life" (Samuel I, xxv, 29). In ancient Egypt there was an office "Opener of the King's Placenta": this referred to the practice of storing the placenta of male members of the royal family during their lifetime because of the belief that it contained an external soul. On the death of the Pharaoh this was slit open to release the second soul. The development of ideas regarding the placenta makes fascinating reading but is, unfortunately, outside the scope of the present review. The interested reader is referred to Needham's *History of Embryology* (1934).

The present paper reviews some of the more important pre-20th century studies of the placental passage of foreign material. A great debt is acknowledged to Preyer's *Specielle Physiologie des Embryo* (Leipzig, 1885) as well as to Needham's monumental three volume treatise *Chemical Embryology* (Cambridge, 1931). However, all original sources have been consulted and new material is also presented. In what follows it is important to bear in mind that, although the placental villi are washed with maternal blood, the two circulations do not inter-mingle. There is a physical barrier between the two. The evidence has been presented under the following headings: microbiological, inorganic, simple organic, dyes and drugs.

Microbiological

Watson appears to have been one of the first to study the permeability of the placenta to pathological agents. Writing in the *Philosophical Transactions of The Royal Society* in 1749 he observed "The foetus does not always partake of the infection from its mother or the mother from the foetus . . . the child before its birth, though closely defended from external air, is not secure from the variolus infection, though its mother has had distemper before." In 1839 Tellegen, working in Groningen, inoculated a pregnant woman with cow pox and noted that three weeks later she was delivered of a full-term child with four tiny pocks. More appeared over the next few days. This was evidence that the virus was able to pass through the foetal capillaries. In 1864 Davaine found large quantities of inflammed spleen bacteria on the mother's side of the placenta but none on the foetal side, suggesting no passage. In studies on sheep Rickert (1873) inoculated around 700 pregnant ewes during the last six weeks of gestation. The lambs were exposed to sheep pox lymph at 4-6 weeks of age and not a single pock was observed. By contrast, 36 control lambs exposed at the same time all showed beautiful pustules. This finding was confirmed by Roloff in 1899 who noted that lambs born a

* Abstract from a paper presented at the Spring Conference, Oxford, April 19-21.

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few weeks after vaccination of the mother were resistant to the natural pox prevalent in the flock. These findings again suggested that passage across the placental barrier was possible.

In 1876 Bollinger recommended intrauterine vaccination and in 1879 Gast successfully inoculated 16 pregnant women using this technique. In 1882 Spitz and Albrecht showed that small pox was able to pass from mother to foetus and in the same year Behm carried out intrauterine vaccination in 38 pregnant women. However, only two successful inoculations were produced in the resulting children. Preyer was doubtful about the procedure and offered the opinion that intrauterine vaccination was so uncertain (in contrast to sheep inoculation) that it should only be used in women in exceptional circumstances.

In 1888 the understanding of the factors governing placental passage was helped by studies carried out by Malvoz in Liége. He showed that microorganisms only pass over the placental barrier and enter the foetus when they produce pathological changes in the placenta itself.

Inorganic

In 1817 Mayer studied blausäuren Kali (probably potassium ferrocyanide and not potassium cyanide) and demonstrated that it passed from the mother to the foetus. This appears to be the first demonstration of the passage of an exogenous chemical and Mayer, professor of anatomy and physiology at Berlin, described his finding as "quite convincing" (ganz überzeugend). Schauenstein and Spaeth, in 1858 used potassium iodide to treat women suffering from syphilis and were able to detect iodide in the meconium and amniotic fluid. The passage of iodide was confirmed by Runge in 1877. In 1859 Albers demonstrated the passage of cyanide from the mother to the foetus confirming the earlier work of Mayer.

In 1869 Clouet, a pharmacist, addressed himself to the problem of foetal poisoning in a paper published in the the *Journale de Chimie médicale.* It seemed that at the time many people were addicted to sucking or chewing match heads and one young girl had died from the habit. Although Clouet does not say so, the girl must have been pregnant fo· ae goes on to describe how he removed the livers of both r her and foetus and established the presence of phosphoric d in the maternal liver. (It is possible that the matches were sucked to produce an abortifacient effect). In a similar case of match-head poisoning at the Berlin Poliklinik, Gusserow (1878) was unable to detect phosphoric acid in the mother or foetus.

Clouet administered copper acetate to pregnant rabbits and was able to demonstrate the presence of copper in the foetuses by a qualitative test, the development of a blue colour in ammoniacal solution. He also claimed to have shown by titrimetric analysis that the concentration of copper in foetal liver and muscle was similar. In 1877 Fehling studied potassium ferrocyanide and sodium salicylate and was of the opinion that much depended on their mode of application: intra-venous administration being too rapid to allow the material to reach the foetus. Preyer disagreed with this. Adolf Gusserow, working in Strassburg in 1872, described a series of experiments which he conducted using pregnant guinea pigs. He gave them a tincture of iodine and also potassium ferrocyanide but was unable to detect either iodide or cyanide in the foetal tissues. He was dissatisfied with the short gestation time of small mammals and decided to study women. He administered one gram of potassium iodide daily to 14 women for periods ranging from a few days to 4 weeks and examined the urine of the newborn before breast-feeding began. In only 4 cases was he able to detect the presence of iodide.

Philipeaux, in 1879, administered 2 grams of basic copper acetate daily to a pregnant rabbit via its food. On the 32 day it gave birth to 10 offspring with a total weight of 500 grams. These were ashed in a platinum crucible when 5mg of metallic copper was obtained. Preyer criticised this work, noting that each foetus contained an average of 0.5mg copper when a total of 64g had been given to the mother over her 32 day gestation. Bunsen burners were made from brass at that time and were known to be able to introduce small quantities of copper when used for ashing. He suggested that foetuses from a mother receiving no copper be used as a control. In 1894 Porak, working in France, studied arsenic, copper, lead, mercury and phosphorus and claimed that the placenta had a variable affinity for these, selectively accumulating copper and mercury but not lead.

Simple Organic

In 1817 Francois Magendie reported in *Meckel's Archiv* his work entitled *"Übergang des Kamphers in den Fotus".* Camphor was administered to a pregnant bitch and its blood assumed a strong smell of that compound. After 3-4 minutes a foetus was removed and its blood examined. No smell of camphor was noted. However, there was a strong smell of camphor from a foetus removed after 15 minutes and in the others removed after this time. Preyer criticised this experiment saying that the means of detecting the camphor was unsatisfactory.

In 1864 Breslau studied the survival of the foetus after the death of the mother. He did this by asphyxiating pregnant animals with chloroform and found that 5 minutes after the death of the mother the young were still alive. Ten years after this, Zweifel, working in Erlangen, studied the passage of chloroform from mother to foetus using pregnant women, he was able to demonstrate the abundant and rapid transfer of chloroform from the blood of chloroformed women to the blood of the umbilical cord. He believed it highly likely that, at each chloroform-assisted birth, the new born shared in the chloroform narcosis. Preyer pointed out that in many cases of asphyxia it was not possible to say that the child might not also have been asphyxiated if choloform had not been used.

In 1876 Fehling conducted the following experiment on a pregnant rabbit. At 11.30 the animal was anaesthetized with choloform and a tracheostomy tube inserted. At 11.43 her breathing stopped and artificial respiration was started. By 11.50 reflexes were almost completely absent. At 12.08 the uterine horns were opened and the young removed. They started to move and breathed spontaneously. During the period 1878-79 Runge conducted a careful series of experiments to demonstrate that longterm chloroform narcosis of pregnant rabbits could be dangerous and could kill the foetuses without necessarily killing the mother. The critical factor appeared to be a substantial fall in blood pressure.

During the 19th century, carbon monoxide was studied by a number of workers and Preyer himself was unable to detect any traces of carboxyhaemoglobin in the foetal blood even though that of the mother contained a high concentration. Carboxyhaemoglobin was detected spectroscopically.

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Dyes

In 1860 Flourens, described how the addition of red madder to the diet of pigeons resulted in a red coloration of their skeletons. He noted that the first French experiments using this approach had been carried out by Duhamel as early as 1739. He reminded his audience how some twenty years earlier he had changed from pigeons to small mammals and shown that the addition of red madder to the diet of young pigs stained their skeletons and teeth completely red. He then referred to a foetus whose bones had developed a beautiful red colour by providing the mother with a diet enriched with madder during the last 45 days of her gestation. Flourens noted that only the bones and teeth were stained and no trace of red was to be found in the cartiledge, tendons, muscle, stomach or intestines. He concluded from his study that "the foetus breathes and is nourished by means of the maternal blood".

In 1867 Jassinsky used indigo-carmine, a substance which could be injected in relatively large quantities by the intravenous route to the mother. Although no trace of the substance was found in the foetal blood, some 20 minutes after injection the outer epithelium of the chorion was intensely coloured and in the villi themselves no trace of indigo-carmine could be found.

Zuntz and Wiener, working with pregnant rabbits in 1878, found that intravenous injection of a dye resulted in its appearance in the amniotic fluid but not in the foetus itself. In 1898 Baron and Castaigne injected methylene blue subcutaneously into the skull of two foetuses and were able to detect the dye in the maternal urine after 30 minutes. These results were confirmed by Lannois and Briau and in the same year Guinard experimented with rosaniline trisulphate, and in all cases was able to detect dye in the maternal urine.

Drugs

Preyer was critical of much of the early work. He offered the opinion that the drug, atropine, was a more useful tool than copper or camphor and describes how he administered 1cc of 1% atropine sulphate to a pregnant guinea pig via the subcutaneous route. Some 15 minutes after injection the first foetus was removed and its pupils were seen to be dilated. A further three foetuses, removed over the following 20 minutes also had dilated pupils. From these observations, Preyer concluded that atropine must have crossed the placenta in less than 15 minutes. In support of this he also cites the case where atropine was given to a woman 3 hours before delivery. The child had very large pupils which did not react to light.

In 1876 Fehling reported in the *Archiv für Gynäkologie* an experiment he had performed on a pregnant rabbit using 1.5cc of a 10% curare solution, while supporting respiration by means of a tracheostomy. The experiments suggested that very little, if any, curare was able to cross the placental barrier from mother to foetus.

In 1881 Wolter repeated this experiment using strychnine, morphine, veratrine and ergotine in addition to curare. At that time Wolter was a veterinary surgeon attached to the second Pommeranian field artillery regiment stationed in Stettin (now Szczecin). This work is particularly interesting since Wolter tried to identify the placental passage of the drugs by means of chemical tests. He acknowledges in his paper that the chemical manipulations were actually carried out by a pharmacist, Herr von Boscamp.

Preyer offers the opinion in his book that morphine may well cross the placenta.

As far as we have been able to determine, the first unequivocal proof of the placental passage of a drug, at least by chemical means, did not come until almost the end of the 19th century. This was done by Eduard Marquis working at the University of Dorpat (now in the Estonian S S R). A detailed account has appeared previously in the *Pharmaceutical Historian* (August, 1982). Suffice it to say that the reagent devised by Marquis, which still bears his name, was sufficiently sensitive to demonstrate the passage of morphine from the mother to the foetus of a pregnant cat. His results were published in his magister thesis of 1896.

Conclusion

Although much of the evidence produced during the 19th century was conflicting, particularly the microbiological work, by its end a clearer picture had emerged. This picture indicated that a wide range of substances were able to cross freely the placental membranes and consequently could exert a toxicological as well as a pharmacological effect on the developing foetus.

Letters

Memorials to Apothecaries

I read with interest Dr. Burnby's letter about memorials to apothecaries. It seems likely that Lot Male of Sleaford was related to Benjamin Male, also an apothecary of New Sleaford who was contemporary with him. **T. D. Whittet**

Ephemera

I am writing this letter to express my concern at the apparent lack of information on the ephemera of pharmacy. Old and unusual chemists labels, bill heads, prescription envelopes, advertising materials etc. make up a fascinating and enlightening way of studying the history of pharmacy. I have collected these items for many years and have been surprised to find that a number of people (not pharmacists) also collect, for example, chemists labels.

Following the publication in the magazine HobbyPharm of a further article of mine describing my collection of labels I was pleased to receive letters from fellow collectors who expressed their involvement in this particularly interesting form of pharmaceutical (and medical) history. I would like to know how many B.S.H.P. members do in fact specialize in the collection of the ephemera of pharmacy and would be pleased to hear from any such collectors. **James Robinson**

Ephemera is to be an important topic at the Spring Conference in Norwich April 11-13. Letters addressed to Mr Robinson, c/o B.S.H.P., 36 York Place, Edinburgh EH1 3HU, will be forwarded. - Editor.

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Diary Dates

September 24
British Pharmaceutical Conference, Jersey.
History of Pharmacy Session, 2pm.
Speakers:- Mr J. D. Kelleher, Department of Social History, University of Warwick, "Civillian Health in Occupied Jersey". Mrs M. H. Phillips, BSHP, "Remembering a Pharmaceutical Baron: Jesse Boot".

November 27
Dr R. J. Palmer, curator, western manuscripts, Wellcome Institute for The History of Medicine on "Pharmacy in Venice in the 16th Century".

1987
Feburary 12
Mr J. G. Coleman "The Irish Society for The History of Pharmacy"

March 12
Foundation lecture Dr W. E. Court, title to be announced.

April 24-26
BSHP Spring Conference Shanklin Isle of Wight

May 21
Mrs C. Hillam. "History of Dentistry"

Sponsors
The committee and officers wish to acknowledge the generous help provided by the Squibb organisation's sponsorship of The Foundation Lecture. Their excellent hospitality during these evenings has gained a special reputation of the Lecture over the years adding to that already achieved by the international reputation of the speakers.

Another company consistently supporting BSHP is Merrell Dow helping generously at a number of functions throughout the year including the Spring Conference.

Reminder
Bankers Orders and Subscriptions
Will members who pay their subscriptions by a Bankers Order, please ensure their instructions are up to date. The current subscription fee is £5. Failure to do so may cause cancellation of membership. To avoid this extreme step please check without delay.

Officers
At the May committee meeting the following officers were elected: *President* Mr J. E. Steane, *Vice President* Mr T. D. Turner, *Treasurer* Mr G. Gunthrope, *Secretaries* Dr W. E. Court and Mr A. Wright.

At the Annual General Meeting, April 12 four names had been received to fill four vacancies on the committee, they were:- Mr G. Gunthorpe, Dr D. B. Jack, Mr J. E. Steane and Mr A. Wright.
Mr D. C. Harrod and Mr A. H. Briggs were re-elected as auditors.

After receiving the badge of office, John Steane (left) the new President, BSHP accepts the congratulations of his predecessor, Mervyn Madge (right).
(Photograph courtesy, The Pharmaceutical Society)

1848

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A Leader in Pharmaceutical History

To mark his retirement from The BSHP Committee, **Leslie Matthews**, a founder member was presented with an engraved goblet at the Society's Spring meeting in Norwich. In an oration Dr T. D. Whittet said Leslie Matthews, The Doyen of British Pharmaceutical Historians had done more than anyone else to popularise history of pharmacy and put it on a firm and academic basis. He continued, "There were a few books about the history of pharmacy before Leslie's outstanding *Pharmacy in Britain* published in 1962, but these were anecdotal and unsystematic. Leslie's book traced the subject from Roman to modern times and was based on a careful study of both manuscripts and printed sources". Later books on the antiques of the pharmacy and perfumery maintained the high standard. A phenomenal output of books had culminated in the splendid series published by Merrell-Dow Pharmaceuticals. "My favourites", said Dr Whittet "are his works on The Royal Apothecaries and The Pepperers, Spicers and Apothecaries of the 13th and 14th centuries." They represented some of the most thorough investigations of original sources undertaken in British pharmacy and medicine, and resulted in interesting and fascinating stories of some of the pioneers of the professions in this country.

In addition to his erudite publications Leslie Matthews had been a leader in the organisation of pharmaceutical history in the United Kingdom. He was a founder member of The Pharmaceutical Society's History of Pharmacy Committee which began in 1952 and was elected its first chairman. He continued as a member of that committee which was transformed to the BSHP in 1967 and "became our second president" Dr Whittet continued "Leslie has received many honours both nationally and internationally... but I must mention his honorary membership of this Society and of The History of Medicine Section of The Royal Society of Medicine... and above all the award of the Urdang Medal in 1968, the first British Pharmacist to be so honoured"

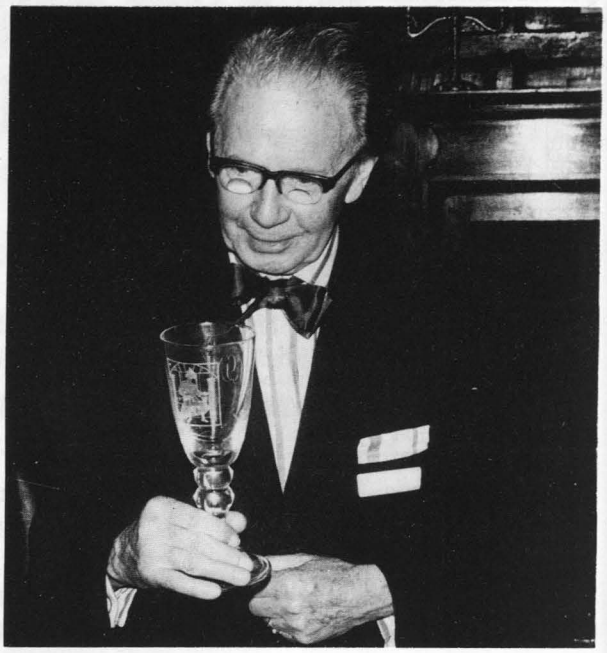
"Another important aspect of Leslie's service to the history of pharmacy has been his personal contribution. He has been one of the most regular attenders at meetings of almost all the bodies concerned with the history of pharmacy and medicine and has always been ready and willing to encourage and help the researchers and students."

"Leslie's retirement from the Society's Committee is the end of an era, we shall miss his friendly guidance and wise counsel. I have pleasure in calling on our president to give to Leslie a token of our esteem and appreciation."

Mr Mervyn Madge, President said how much he agreed with Dr Whittet's references to Leslie and how much encouragement and help Leslie had given him both in and out of the committee. It was therefore a great pleasure to make the presentation of the engraved goblet on behalf of the Society and its members.

Leslie when accepting the goblet then thanked the president and members for the unique gift and Dr Whittet for his kind references. He pointed out that he too had received a great deal of support from members of the Society and members of the committee and wished them well in the future.

The goblet, which had been engraved with the apothecary logo which appeared on the president's badge and on the heading of the *Phamaceutical Historian* would be a treasured possession.



An apothecary in glass receives an approving glance from Leslie Matthews.

The goblet had been specially commissioned by the Society and engraved by Alison Geissler an eminent glass engraver at her studio in Glasgow. In addition to the 'apothecary' the goblet bears the initials L.G.M. in a decorative form.

Bookreview

'An Account of the Foxglove and its Medical Uses 1785-1985'
by J.K. Aronson. Pp xx + 399. Price: £25.00.
Oxford: University Press, 1986.

Two hundred years have elapsed since William Withering published 'An Account of the Foxglove and Some of its Medical Uses' on July 1st, 1785. This epoch-making work included 163 cases reported by Withering, 53 communications from correspondents, preparations and doses, and cautionary rules for use.

In commemmoration J.K. Aronson has produced a facsimile of Withering's original work with informative, carefully researched, marginal annotations illuminating the main text. For example, the author draws attention to Withering's conservative prescribing, his case recording methods and his successful use of a highly toxic plant. Other annotations summarise information on scientists and physicians and point to Withering's standing in contemporary society. The annotations on early botanical terminology and the symbols used in pre-1900 prescriptions aid the younger reader and, to the pharmacist, references to prescriptions and drugs such as myrrh, calomel, asafoetida, etc., are fascinating.

The second part of Aronson's book comprises a modern assessment of the clinical use of foxglove.

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Aronson discusses Withering's work in the light of modern pharmacological findings and his contributions include the pre-Withering use of foxglove and its mention in literary works.

A carefully compiled biography of Withering reveals his career, publications, personality, friends and enemies as well as other intriguing events such as the naming of *Witheringia solanacea* to honour him as a botanist, and his association with barium chemistry, the sulphate test and witherite.

The gradual development of the clinical use and understanding of foxglove in the 19th and 20th centuries, including the digoxin affair of the 1970's, is presented in a compelling style and shows that Withering's careful experimentation and clinical observation came to substantially correct conclusions concerning its use.

A sound bibliography of 266 references and 3 indexes complete a volume that should be compulsory reading for all practitioners and students of pharmacy, pharmacology and medicine.

W.E. Court

A Family of Dorset Apothecaries

By John V. Boys

Last year I saw a brief review of Dr. Burnby's book "A Study of the English Apothecary from 1660 to 1760". Eventually I acquired a copy to see what light it might cast on my own apothecarial family which spanned four generations in Dorset and was delighted to find how well everything fitted into place, but as my family was apparently a model unknown to Dr. Burnby, I then wrote to her, and it is as a result of our correspondence that I have been encouraged to write this short article.

A footnote on the penultimate page quotes Mr. W. Derry (with whom I have since corresponded) who had observed that the aldermen and civic dignitaries of 17th century Bath had close ties with apothecaries, who thus acquired unusual influence. This was a fascinating comment since I had only a few weeks earlier established beyond reasonable doubt that my ancestor John Boys of Sherborne (c1653-1724), an apothecary worthy enough to be described as "Mr.", was the son of John Boys of Bath (1065-1680), alderman, and in 1656 mayor, whose elder brother Robert (1603-1653) is described as "gent" and their father Stephen Boys (deBoyce) (d1612) as "cook" probably meaning inn-keeper and victualler. The connection was established from surviving lease documents, evidence from parish registers being notoriously sparse during the Commonwealth.

However I had previously acquired a hint of the connection by knowing that John of Sherborne took over the postmastership there from his father-in-law John Chaffin the younger in 1692, and finding that John of Bath included collection of monies for the post among his civic duties, as is clearly shown in the Bath Chamberlain's Accounts. This explained how John Boys described on his marriage bond as "apothecary of Bath" came to marry in 1678 at Wells St. Cuthbert Joan Chaffin of Sherborne; their respective fathers must have had close contact on postal affairs across Somerset. The Chaffin family is being well researched, but did not have any apothecarial connections.

I suspect that John was apprenticed to his cousin-in-law Henry Parker, an influential apothecary in Bath, until he qualified, married Joan Chaffin, and moved to Sherborne where he continued as both apothercary, and from 1692 post-master, until his death in 1724. Joan died there in 1732. John's mother Theophila was buried there in 1686 but I have not found evidence from primary sources that she was John of Bath's widow.

John and Joan had two surviving sons, and an unmarried daughter, also Theophila, who died in 1759. The elder son, John, was born in 1679, married in about 1705 an unidentified Frances, and settled in Cerne Abbas where he practised as an apothecary until his death in 1750. He had two sons: the first, William (birth not found) came to an untimely end in 1741 on H.M.S Panther where he was Assistant Surgeon, having presumably been trained by his father who we know had other apprentices; and the second, Thomas (1710-1774), remained in Cerne Abbas as an apothecary, and contrived in 1748 to marry a young daughter of David Worsley who belonged to the very prestigious Worsley family in the Isle of Wight, but how he met Frances is a mystery.

Thomas and Frances had several children. Two of the daughters married surgeons in Sherborne, Richard Self Stone and Henry Smith Brice. One son became a Doctor of Divinity and another became a Lieutenant Colonel, but the eldest, yet another John (1750-1808) followed the family tradition. His early career has not been traced but he appears in 1791 as a member of the Corporation of Surgeons, living in Berners St., and later described as a physician and man-midwife at the Westminster dispensary; the M.D. attached to his name in later life was either somewhat honorary or acquired at some University whose list of alumni are so far inaccessible to me — Wittenberg is a possibility on very slender evidence. The descendants of this John have nearly all been professional men and graduates, but none have been doctors.

Returning to John and Joan in Sherborne we now come to the second son Sampson (1685-1752) who married Agnes Crane in 1725 and continued as an apothecary in Sherborne, but also carried on the postmastership from his father. His son, another Sampson Boys (1726-1790), was educated at Sherborne School where he subsequently became a Governor, was warden of the Almshouse, was leading surgeon-apothecary in the town, and may have continued to be involved with the postal system since he apparently owned the Angel Inn across the threshold of which can still be read the words "licensed to let post horses". His wife Jane was a member of the Bastard family, a surgeon-apothecary who died unmarried, but his brothers were an attorney-at-law, a naval captain and a naval commander, and the male line subsequently failed without producing any more medical men.

We have then in summary a family not of gentry stock but labelled Mr., Dr., Capt., etc., containing eight medical men over four generations, with several more medical connections by marriage, and also with very strong connections with the Post Office. I have been able to locate wills for all but one; John 1724, Sampson I 1752, William 1741, Thomas 1774, Sampson II 1790, Sampson III 1793, John 1807 — but not John 1750.

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A History of Mustard in Pharmacy and Medicine*

William E. Court

Earliest records indicate that mustard was a greatly valued crop during the Sumerian civilisation c 3000 BC and mustard was mentioned in Egyptian papyri c 2000 BC. Later, in 336 BC, Darius, the Persian leader, informed Alexander the Great of the size of the Persian army by sending him a sack of tiny, fiery mustard seeds to represent the number of his troops.

In Greek medicine mustard was valued both as a condiment and as a drug but the Romans really developed the use of mustard in the culinary art, using the ground or pounded mustard mixed with wine, honey, oil or vinegar. The name mustard was probably derived from the Latin 'mustum ardens' or 'burning must', referring to the paste prepared by mixing old grape wine and crushed seeds. Black mustard was mentioned in an edict promulgated by Diocletian (301 AD) and indicated its widespread use as a condiment in the eastern Roman Empire.

Mustards grew freely in the Middle East and the Holy Bible gives four references to mustard (Matthew, *13* and *17*, Mark *4* and Luke *13*).

Most writers agree that the spread of the Roman civilisation throughout Europe was accompanied by the growing use of mustard as a condiment. Abbey accounts from St. Germain-des-Prés in Paris show that mustard was a significant source of revenue. Centres developed where mustard makers prosecuted their art, and especially at Dijon where hand-ground seeds were used until the steam powered mills were introduced in about 1850. Dijon is still the French mustard centre and famous for spicy mustards made with white wine and Tarragon.

The Romans probably brought mustard to Britain and by the 13th century authorised mustarders and saucemakers were plying their trade, preparing condiments for banquets and feasts. Household accounts from the 13th and 14th century frequently mention 'Senapium', a name resembling the pharmaceutical name 'Sinapis'.

Mustard was the spice of the common people; in the late 13th century mustard seed sold at 1s 3d to 6s 8d per quarter; a century later it sold at 15s to 16s per quarter but in the 15th century some mustard could be obtained for as little as one farthing per lb. It was valued because it offset the harsh flavours of the salted and smoked meats and fish in those pre-refrigerator days.

In the 17th century Tewkesbury mustard was much prized and worthy of mention by the herbalist Coles (1657) and by William Shakespeare in Henry IV part 2.

Originally mustard was made into balls with vinegar or honey and a spice such as cinnamon. The product was stiff and dry so more vinegar was added before use. Until the 18th century mustard was ground between millstones or in cannonball iron mortars and the resultant mustard flour was 'coarse-grained', having a speckled appearance due to particles of testa or husk. About 1720 a Mrs Clements of Durham evolved a process of pounding and sieving the mustard seed which yielded a fine yellow product free of husk particles. Although Mrs Clements kept the details of her process to herself, a very similar stratagem was adopted by Messrs Keens of Garlick Hill, London when opening on the factory scale in 1742.

In 1814 a young Norfolk miller named Jeremiah Colman set up his plant in the water-mill at Stoke Holy Cross near Norwich. His process depended on grinding in pestles and mortars followed by sieving through specially woven silk sieves. His success ensured that Colman's mustard still dominates the British market.

Writing about table mustard in 1842, Jonathan Pereira stated:- 'Two bushels of black mustard and three bushels of white seeds are converted on grinding to 145 lbs flour. To diminish the pungency and improve the colour, add 56 lbs wheat flour and 2lbs turmeric. Acrimony is restored without pungency by addition of 1 lb chilly pods and ½ lb ginger. Black seed alone is too pungent for table use.'

In Britain mustard was grown in the late 19th century in the areas of rich alluvial soil such as Cambridgeshire, Lincolnshire and Yorkshire.

Despite this interest in mustard as an adjunct to food, the earliest usage of mustard was medicinal rather than culinary.

The early Greek authors Hippocrates (460 — 377 BC), Theophrastus (375 — 287 BC) and Dioscorides (50 — 100 AD) employed mustard in medicine mainly as an external or local stimulant to dissipate local inflammations, diminish coma, soothe pain, encourage the growth of hair, relieve deafness, etc. Internally it was used for the treatment of intermittent fevers of the malarial type and as an emetic in cases of poisoning.

Galen (129 — 199 AD) classified mustard in his rigid system of medicine as hot in the fourth degree, that is, as a substance causing inflammation or raising blisters, and acting as a counter-irritant.

Pliny (23 — 79) noted that three types of mustard were used in Europe and the Near East viz. Black Mustard (today known as *Brassica nigra* Koch), White Mustard (known as *Brassica alba* Hook f. et Th.) and the southern European species *Diplotaxis erucoides* DC = *Sinapis erucoides* L.

In Britain Black Mustard is normally cultivated and is an erect annual, 3 feet or more in height, bearing conspicuous, yellow, Cruciferous flowers and erect, smooth pods; White Mustard is a smaller plant, about 1 foot high, with large yellow flowers and more or less horizontal, hairy pods and usually grows wild.

Mustard was mentioned by the Welsh physicians, the Meddygon y Myddfai, who extolled its virtues as a medicine. Many early pharmacopoeias included sections or references to 'Sinapi' e.g. Bruges (1617), Brussels (1641), Hague (1659), Alkmaar (1726), London (1720), etc.

John Gerard in his famous herbal published in 1597 eulogised on the culinary and medicinal virtues of mustard

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Footnote

* abstract from a paper given at the Spring Conference, Norwich April 11-13

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repeating earlier authors, mentioning the use of mustard for those who are 'short winded and stopped in the breath', for the treatment of toothache, for throat inflammations, for lethargy and fever and as drawing plasters. In Gerard's time White Mustard was apparently not common in Britain. The remarkable herbal compiled by Nicholas Culpeper and published in 1653 under the title "The Complete Herbal, together with the English Physician, enlarged, and Key to Physic" and reissued many times up to the present day, reveals many observations on mustards.

He also extolled the value of mustard as a diuretic and as an alexipharmacal, a substance resisting poison, either by taming the poison, opposing the poison, or by 'thrusting it out of doors', an obvious reference to emetic action. Culpeper certainly believed that mustard 'resists the force of poison, the malignity of mushrooms, and venom of scorpions, or other venomous creatures, if it be taken in time', the mustard being taken as a decoction.

Of intermittent fevers of the malarial type, which were not uncommon in East Anglia in Culpeper's time, he wrote 'the decoction of the seed taken before the cold fits of agues, alters, lessens and cures them'.

He stated that an electuary or drink of mustard seed stimulated the spleen, had a laxative action, and 'doth mightily stir up bodily lust'. Repeating Gerard, he indicated that mustard would often help toothache if chewed in the mouth. This counter-irritant theme was further developed to deal with the aches and pains of gout and joints, the blisters formed on the application of plasters serving to draw the disease to the outward parts of the body. Mustard cream or ointment could help to remove the black and blue markings of bruising, help the falling of hair and remove scabs and itch and cleanse away freckles, spots, etc.

In Culpeper's time, several mustards, apart from black and white mustards, were in use. Hedge Mustard (*Sisymbrium officinale* Scop. = *Erysimum officinale*) was stated by Culpeper to be similarly recommended but less powerful. Mithridate Mustard (*Thlaspi arvense* L.) and Treacle Mustard (*Erysimum cheiranthoides* L.) were also weaker than common mustard. These mustards appeared in formulations such as Mithridate (51 ingredients), Venice Treacle (68 ingredients) and Matthiolus 'Great Antidote against poison and pestilence' (124 ingredients).

The London Pharmacopoeia of 1720 differentiated the more pungent Black Mustard from the milder White Mustard and the New Dispensatory of 1770 included the fixed oil of mustard obtained by the expression of the seeds; the oil was bland and devoid of any mustard pungency and its value as an emollient externally and a mechanical laxative internally was stressed, and it was astutely observed that the pungency of the mustard seed remained in the residual cake.

An interesting galenical was Serum Sinapinum or Mustard Whey, regarded as a 'not inelegant form for the exhibtion of mustard seeds'. Three teaspoonfuls of bruised mustard seeds were to be boiled in 2 pints of cow's milk until a curd formed from which the whey could be carefully separated. The whey demonstrated the pungency and medicinal virtue of mustard.

Plasters figured prominently in 1770. Emplastrum Vesicatorium or Blistering Plaster comprised ingredients such as burgundy pitch, yellow wax, Venice turpentine, mustard seed, black pepper, verdegris and cantharides (Edinburgh Pharmacopoeia, 1756).

Poultices or cataplasms were also popular e.g. mustard seed, bread crumbs and strong vinegar with possibly a little bruised garlic (Edinburgh Pharmacopoeia, 1756) or the same with added black soap. Such poultices were used as stimulants, often inflaming the areas to which applied, raising blisters but not as effectively as cantharides. To raise the pulse and relieve the head, particularly in the low states of acute diseases, such poultices were to be applied to the soles of the feet; the alternative was a mustard footbath.

More powerful was the Ischiadic Poultice, Cataplasma Ischiadicum, comprising ½ lb mustard seed, 1 dram each of white pepper and ginger and sufficient oxymel to fabricate the poultice; a caution indicated that this poultice would frequently vesicate the skin.

The Edinburgh New Dispensatory of 1804 stressed the use of mustard as a laxative, stimulating the stomach and exciting peristalsis especially of the torpid intestines.

Gray's Supplement to the Pharmacopoeia (1836) referred to a Sinapism prepared by beating fresh horseradish root and flour of mustard together with water. The 2nd edition (1848) clearly divided the Cruciferous group of plants of the Mustard family i.e. cresses, mustards, horseradish, etc. and indicated that black mustard was more pungent than white mustard. Lindley's warning that mustard seeds could lodge in the vermiform appendages of the caecum and cause ulceration of the intestines was repeated. Thus side effects were to discourage the internal use of mustards.

Fortunately plasters and poultices remained popular and advocated by Colman in his handbills and labels. Gray (1848) also included Whitehead's Essence of Mustard, a preparation including oil of turpentine, camphor, spirit of rosemary and flour of mustard, a stimulating external preparation which was also used for oiling clock mechanisms because it did not freeze! Pills of Whitehead's Essence of Mustard were made using balsam of tolu and resin. An alternative external application was Liniment of Mustard prepared by digesting mustard seeds for 1 week in oil of turpentine using gentle heat. These products are however rarely to be found in old prescription books. Was mustard a do it yourself treatment?

In 1848 flour of mustard usually comprised powdered seeds of black and white mustards and, for commercial and domestic use wheat flour, cayenne pepper and turmeric were added. Gray offered 3 formulae to pharmaceutical chemists. For table mustard No.1. he included common salt, horseradish root, garlic, vinegar and flour of mustard; for No.2. salt, vinegar and flour of mustard; and for No.3. salt, tarragon vinegar, vinegar and flour of mustard. It is interesting to read the labelling of a present-day commerical brand of mustard. Salt, sugar, citric acid, wheat flour, mustard flour and colours E171 and E102. Little has changed.

During the 19th century the organic chemists began the exciting search for the chemistry of plant drugs. Mustard was not to escape their attention. By 1852, in 'The Prescriber's Handbook' by Trousseau and Reveil, emphasis is already turning to the chemical reactions of mustard. The reader is informed that 'the active principle of black mustard is the essence, which does not exist beforehand, but

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is formed by contact with water by the reaction of myrosine upon myronic acid'. Boiling water, alcohol and acids oppose the reaction and should not be included in mustard poultice formulations.

The essential oil of mustard had been first observed by Nicholas Le Febvre in 1660 and his observation was confirmed by Boerhaave in 1732. Murray (1794) reported that the essential oil of mustard possessed a high specific gravity and was acrid. Thibierge (1819) concluded that sulphur was an important constituent of the oil and Bouton-Charlard and Robiquet (1831) were able to differentiate black and white mustards by chemical rather than botanical methodology.

Nevertheless, the chemistry was not really understood. In 1855 a major step forward was made by Bertholet and De Luca (1855) and, independently, by Zinin (1855); they synthesised mustard oil from allyl iodide and potassium thiocyanate proving that mustard oil was allylisothiocyanate. Although Hubatka (1843) obtained oil of mustard from oil of horseradish, admittedly in much lower yield, it was not until 1863 that the formulation of mustard oil was satisfactorily explained. Will and Körner isolated a crystallisable substance which they named potassium myronate; today it is often called sinigrin or, more correctly, potassium allylglucosinolate. The albuminous body or enzyme, myrosin, now called myrosinase, converted sinigrin to allylisothiocyanate, potassium acid sulphate and glucose. Thus Will and Körner were able to involve the myrosin of Bussy (1839) in the formulation of the essential oil of mustard. As the aqueous solution of myrosin coagulated at 60°C and was rendered inactive, it was obvious that roasted or heated mustard seeds or mustard seeds dropped into boiling water would yield no essential oil.

Having worked on sinigrin from black mustard Will, in 1870, turned his attention to white mustard and discovered the composition of sinalbin, now more correctly called sinapine 4-hydroxybenzylglucosinolate.

Originally it was believed that white mustard contained more enzyme than black mustard and should therefore be added to the black mustard to increase the amount of enzyme present and so accelerate the release of essential oil in the presence of water. This is now refuted but the mixed mustard is considered to be much better in flavour.
Modern work has now widened our knowledge of mustard plants and their relatives in the plant family Cruciferae. The group is rich in isothiocyanate or, in modern terminology, glucosinolate glycosides (Kjaer, 1961) and sulphur compounds occur throughout the family and have been exploited in current chemical taxonomy or classification of plants.
Other chemists elucidated the composition of the bland, emollient, inodorous fixed oil of mustard isolating fatty acids such as stearic, oleic and erucic (brassic) acids and, later, sinapoleic (Darby, 1849) and behenic acids (Goldschmiedt, 1874). Subsequently linoleic, linolenic, lignoceric, arachidic and palmitic acids were reported and the yield of the unsaturated erucic acid ($CH_3(CH_2)_7CH=CH(CH_2)_{11}COOH$) was estimated as about 51 per cent of the oil. Mustard oil is widely used in cooking in the Indian subcontinent.

The BPC 1911 stated that white mustard seeds yielded about 30 per cent fixed oil and black mustard seeds about 27 per cent. Both types yielded mucilage from the epidermal cells of the testa.
Mustard as a medicinal agent remained popular into this century. Poultices with linseed or breadcrumbs or mustard alone were prepared by spreading on linen and covering with linen to intervene between the mustard and the skin. Often they were prepared domestically.

Rigollot's Mustard Leaves were popular because, requiring only wetting before use, they were clean and economical. Rigollot (1867) had developed a simple manufacturing process depending on the observation that the fixed oil could be removed from the seeds by pressure or solvent action e.g. benzol, without affecting the essential oil and the residual cake could be used to impregnate the leaves of paper.

Squire's Companion to the British Pharmacopoeia of 1894 included a mustard poultice but observed the suggestion that such preparations were domestic and should be deleted from the pharmacopoeias. It did include official preparations, Charta Sinapis, papers prepared similarly to Rigollot's Leaves, Compound Liniment of Mustard (Essential oil of mustard, camphor, castor oil and alcohol) and the Essential Oil itself from the earlier pharmacopoeia, and unofficial formulations viz. Applicatio Sinapis (Essential oil of mustard and Eau de Cologne) and Infusum Sinapis, mustard infused in barley water for the relief of obstinate coughs.

The B.P. 1898 included mustard papers and liniment but not poultices although a wider range of mustard preparations was to become available in the new handbook, the British Pharmaceutical Codex of 1911. Mustard Bath, Balneum Sinapis, 1 part mustard to 400 parts warm water, was recommended for use in chills and febrile conditions, as indeed the old Victorians had used mustard baths and foot baths, and the B.P.C. cautioned that, if used for a child, the bath should be given until the arms of the person holding the child begin to tingle. Earlier, in The Prescriber's Complete Handbook (1852), it had been instructed that the patient remain in the bath until he feels a very painful sense of burning or, in the case of a child, until the skin is very red. Colman's labels also advocated footbaths.

Cataplasma Sinapis, Mustard Poultice, B.P.C. 1911, was formulated with crushed linseed, mustard and water and employed as a stimulant counter-irritant in deep-seated inflammations such as pleurisy and bronchitis. No formulae monographs were given for infusion, plaster or papers.

By 1914, only the liniment remained in the British Pharmacopoeia and there were no monographs on Sinapis. Mustard was declining in importance. The B.P.C. 1923 repeated the Bath and Poultice formulae and referred to the earlier mustard paper and plaster.

Although the official products were losing favour, mustard plaster or leaves continued to be available commercially e.g. British Drug Houses "Heron" Brand (1930) supplied in tins of 7 leaves or envelopes with one leaf and advice on use.

Mustard had disappeared from the official list of drugs by the time of issue of the B.P. 1932 although, for practising pharmacists, the B.P.C. 1934 included monographs on black and white mustards and comments on bath mustard, mustard bran (seed coat) and mustard flour and repeated formulae for mustard bath, poultice and liniment.

Although the pharmacopoeias omitted mustard, the B.P.C.

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1949 repeated earlier monographs with improvements of required standards, reflecting scientific advance, but mustard poultice and plaster had disappeared back into the realms of folk medicine. By 1954, even the B.P.C. had deleted all headings except Expressed Mustard Oil and that too disappeared from the 1959 edition.

Brasisca alba and *B. nigra* were defined as mustard in the pharmaceutical field but commercially over the past 100 years the use of *B. juncea* Hook. et Th., Indian mustard, had steadily increased in the commercial, culinary market. It is similar but less pungent than black mustard.

Some old plants have disappeared as such from general use but chemical compounds derived from them have been adopted into today's medicine. For mustard such a compound was discovered. Thiosinamine was prepared by mixing mustard essential oil and absolute alchohol, adding excess ammonia, and heating at 40° for several hours. The odours of ammonia and mustard oil disappeared and a product crystallised and was found to be allylthiourea. Thiosinamine was marketed as Rhodallin, and its double-salt combination with sodium salicylate, a more water-soluble compound, as Fibrolysin, Hebra advocated the use of thiosinamine as an injection for the removal of scar tissue, especially burn scars, and for ankylosis of joints, cirrhosis of liver and alimentary stenosis. The B.P.C. 1911 expressed some doubt about the efficacy of thiosinamine, and the B.P.C. 1923 observed 'its value is probably negligible and there may be side effects such as nausea, vomiting, headaches and fever.' These doubts were repeated in the B.P.C. 1934 although Martindale's Extra Pharmacopoeia 1941 referred to the use of thiosinamine in ophthalmology for corneal scars, corneal, opacity, choroiditis, etc, and with sodium salicylate (Fibrolysin, Merck) for scar tissue removal and the absorbtion of fibrous tissue and included new products Cicatricine (Martindale), an injection of thiosinamine, phenazone and benzamine lactate, and Thiodin (Cognet, Paris) and Tiodine (Roberts), thiosinamine and ethyl iodide injections, and the similar Iodolysin (Allen and Hanbury). All these products were developed with the aim of removing scar tissue and found some application in the treatment of rheumatoid arthritis. The B.P.C. 1949 retained a monograph on thiosinamine but it was deleted from the 1954 edition although the 24th edition of Martindale's Extra Pharmacopoeia repeated the 1941 references (1958). Ten years later the MIMs Annual Compendium (1968-1969) made no reference to the commercial products and thiosinamine had been overtaken by newer and more effective medicines.

The story of mustard in pharmacy and medicine would appear to be somewhat transient; it appeared in the pharmacopoeias and soon disappeared, but it remains firmly established in folklore despite its lack of mention in many medical handboks for laymen. Like many other ancient plants, mustard has encouraged, inspired and stimulated the efforts of scientists in their endless endeavour to unravel the mysteries of nature.

Mustard and its relatives may still have a role to play because scientists have observed that such plants contain antibiotic substances which are absorbed via the epidermis of the soles of the feet and that story is, as yet, incomplete. Mustard must, however, remain important because of its great value as a condiment and as a source of unsaturated food oil.

Foundation Lecture 1986

Asthma Cures: Ancient and Modern*

By Dr. Alex Sakula

Asthma is an ancient disease with a rich history. In Greece the word originally embraced many varieties of breathlessness or dyspnoea. It was not until the 17th century that asthma came to mean that special variety of dyspnoea due to variable narrowing of the bronchial tubes which we now know results from congestion and swelling of the mucosal lining of the bronchi, with thick sticky mucus blocking the airways, associated with spasm of the smooth muscle in the wall of the bronchi, the cause of the condition being multi-factorial — genetic, environmental, emotional, etc.

Treatment in early times included such primitive medicines as the dung of stallions. Several asthma remedies still prescribed today date back to ancient China (acupuncture and the plant Ma Huang, from which ephedrine is derived) and to ancient India (Yoga and the plant Datura from which strammonium is derived). Ancient Greek medicine (from the 5th century B.C.) was largely practised in Asklepeian temples where suggestion (with the assistance of snakes) played an important part. The teachings of Hippocrates, Aretaeus and Galen as well as the *"De Materia Medica"* of Dioscorides (1st century, A.D.) were to influence medical practice for the next millenium.

In mediaeval times, Arabic physicians (personified by Avicenna and Rhazes) used their knowledge of alchemy to produce new medical preparations, but astrology and the zodiac were also employed. The great Jewish philosopher-physicians Maimonides, who practised in Egypt in the 12th century and attended the Arab ruler Saladin, did not indulge in such practices. Saladin's son suffered from asthma and it was for him that Maimonides composed his *"Treatise on Asthma"* (1190), the first book to be devoted to this disease.

The Renaissance in Europe heralded major changes in medical attitudes and therapy. That remarkable innovater Paracelsus and his disciples, especially Jean Baptiste van Helmont, disassociated themselves from the time-honoured Galenic herbal remedies and substituted their new "chymistry." The discovery of America by Columbus in 1492 was followed by the introduction into Europe of new remedies for conditions such as asthma, e.g. ipecacuanha, balsam of Peru.

By the early 17th century, some of the old nostrums were abandoned but even the *London Pharmacopoeia* of the College of Physicians (1618) contained such bizarre remedies for asthma as linctus made from fox's lungs, prepared millipedes, etc; while the maverick figure, Nicholas Culpepper, could still write in 1652: "A physician

Footnote

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without astrology is like a lamp without oil." Quackery flourished.

Fresh light was thrown on the problem of asthma in the mid-17th century by the notable Oxford physician, Thomas Willis, who was the first to contend that asthma consisted of a constriction of the bronchial airways, of a "convulsive" nature. He therefore recommended the use of anti-convulsant and sedative measures and prescribed Spirit of Hartshorn and opiates. It was however Sir John Floyer who, in his *"Treatise of Asthma"* (1698) — the first major work on asthma in modern times — provided clarification of the subject. He was himself a sufferer from asthma and although he tried most of the remedies then popular, he found that he derived most benefit from squill (Scillae). Similar drugs, in sub-emetic doses, together with purgation and venesection, remained the fashionable treatments during the 18th century.

At the commencement of the 19th century, it was the French physician, René Theophile Hyacinthe Laennec — the inventor of the stethoscope (1816) — who put the finishing touches to the clinical recognition of bronchospasm in asthma, which he described in the second edition of his great treatise *"De L'Auscultation Médiate"* (1826).

In 1812, Datura Strammonii, a relaxant of bronchial muscle, was introduced from India. In 1860, there was published the most important work of the 19th century on the subject, *"On Asthma"* by Henry Hyde Salter, physician to Charing Cross Hospital and himself an asthmatic.

Slater recommended the use of strong black coffee (a fore-runner of later methyl-xanthine therapy) and belladonna (a fore-runner of later atropine therapy). Other medicines popular in the late 19th century included lobelia, nitrites (burning nitre) and iodides.

The 20th century witnessed the appearance of further asthma cures. Ephedrine was isolated by Nagai Yamanashi from the Chinese plant Ma Huang in 1885, but it was not until the 1920's that it came into general clinical use. In 1901, another Japanese, Jokiche Takamine, extracted adrenaline from animal adrenal glands. Injection of this hormone soon became a standby in asthma treatment, although it was not until the 1930's that the nebulised form by inhalation via a hand-pump came into general use. Both adrenaline and ephedrine possessed undesirable cardio-toxic side-effects. Isoprenaline was introduced in 1948; and in 1956, Philip Maschberg, a United States engineer, invented the device enabling a metred dose of an aerosol of these drugs to be self-administered by the patient. Unfortunately, the excessive use of the early isoprenaline inhalers was responsible for a rise in the mortality from asthma during the 1960's. This problem has now been largely solved by the introduction of a new generation of symphathomimetic bronchodilator drugs, of which salbutamol was the prototype. The aerosol inhaler is now also used for other asthma drugs, e.g. newer derivatives such as ipratropium.

Salter's hot coffee treatment has already been referred to. Following the isolation of caffeine and theobromine, theophylline was synthesized in 1888 and aminophylline in 1908. The latter, being soluble, was especially valuable for injection in the treatment of severe acute asthma (status asthmaticus). Unless the dose was carefully monitored, theophylline tended to be toxic, but in recent times, improved long acting oral preparations of theophylline have become available.

The immunological and allergic basis of asthma (and hay-fever) was worked out step by step during the latter part of the 19th century and the commencement of the present century. In 1910. Samuel Meltzer, in the United States, was able to postulate that asthma is akin to anaphylaxis and the work of the British Nobel Laureate, Sir Henry Dale, suggested that the phenomenon was related to histamine. It was not until 1933 that Daniel Bovet (a Swiss Nobel Laureate) synthesized an anti-histamine and this was first used for allergic asthma in 1942 by Bernard Halpern in Paris. Although successful in hayfever, the anti-histamine treament of asthma proved to be disappointing.

The better understanding of the allergic component in many cases of asthma (e.g. to grass and plant pollens, fungal spores, animal emanations, house-dust, etc.) raised hopes that desensitisation by means of a specific vaccine might be used prophylactically. These expectations have been only partially fulfilled and further research is required.

The introduction in 1967 of disodium chromoglycate, derived from the Eastern Mediterranean plant Khellin, was a major break-through. J.S.G. Cox and Roger Altounyan pioneered the use of this drug, administered in powder form by Spinhaler. It has not proved to be a cure for asthma but has a sure place in the asthma specialist's medical armamentarium as a means of preventing certain types of asthma, e.g. allergic or exercise-induced.

Finally, the introduction of cortico-steroids in the late 1940's has revolutionised the treatment of asthma, especially the more severe cases. Oral preparations of prednisone (1950), injections of hydro-cortisone (1954) and inhalations of an aerosol of beclomethasone (1969) are now widely employed.

The modern management of asthma, however, does not consist merely of the prescription of one of these "wonder-drugs." Very careful specialist assessment of the invidual patient is mandatory, with careful measurements and recordings of the variability of pulmonary function, immunological testing, coupled with a holistic approach to the patient, whose family, emotional state, occupation, environment, etc. all need to be taken into account.

Such is the story of the evolution of ideas relating to the concept and the therapy of asthma, from ancient times until the present. Who can prophesy what the cure for asthma will be a hundred years from now?

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Note: except where indicated otherwise the meetings are to be held at the Pharmaceutical Society, 1 Lambeth High Street London.

From Nottingham to Devon

The historic Nottingham pharmacy of Mary Burr, a past President of the Pharmaceutical Society, was due for demolition owing to expansion of a nearby factory. Miss Burr was greatly concerned that this would lead not only to the closing, but the possible break up and loss of the valuable Victorian pharmacy treasures. She mentioned her worries and problems to Mervyn Madge Past President B.S.H.P. and a trustee of the Plymouth Park (Victorian) Pharmacy Trust. Coincidently Miss Burr's pharmacy is also called the Park Pharmacy so it seemed quite appropriate for the Plymouth Trust to be interested.

When the matter was brought to their notice the Trust's Curator Dr Robert Knight, and the Board felt that an effort should be made to save the Nottingham pharmacy and Mary Burr was willing to make a financial sacrifice in an endeavour to help.

As a result the pharmacy has now been transferred to the Cookworthy Museum at Kingsbridge, Devon, where the addition was welcomed. This was also appropriate since William Cookworthy the Father of the China Clay Industry was born in Kingsbridge and educated at the Grammar School which is now the Museum.

Apart from discovering the process of making hard paste porcelain until then the monopoly of the Chinese, he was at the Plough Court pharmacy of Allen & Hanburys before returning to the South West.

BSHP members are encouraged to visit the Cookworthy museum at Kingsbridge and also the Park Pharmacy at the Merchants House, Plymouth.

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The Norwich Quakers

Some Links With Pharmacy and Medicine*

By Margaret Phillips

When I offered this paper on the Norwich Quakers, I little realised how formidable a task I had set myself. Knowing Norwich to have been the home of such famous and influential Quaker families as the Gurneys, Barclays and Hoares, I did not anticipate any difficulty in finding among them or their acquaintances, quite a number of Quaker apothecaries and doctors. I found, in fact, very few.

The Norwich Quakers were at first mostly cordwainers, weavers and clothworkers; some were farmers or millers; a few were tailors or shoemakers; later, as merchants, brewers and bankers, they became exceedingly prosperous. But the records show very few apothecaries or doctors. It is interesting to speculate on the reason for this. Mr Leslie Matthews, in his extensively-researched history of the Spicers and Apothecaries of Norwich between 1450 and 1750, states that, judging by the number of freemen who were enrolled as apothecaries, Norwich was seldom without a dozen or more in business at any one period. Margaret Pelling, in an address to the History of Pharmacy Society in February, 1983, agrees with that estimate. Both historians have listed a number of these, though Mr Matthews does state that in the Index of Wills between 1604 and 1686, far fewer occupations were given. According to M.W. Bulman, "there appears to be no record of any physician or surgeon of any consequence in Norwich at the end of the 16th or commencement of the 17th century."

When Norwich became the venue for the meeting of the British Pharmaceutical Conference in 1975, Mr W.L.B. Coleman published a detailed account of the pharmacists in that city between 1800 and 1975. So we have a fairly comprehensive and continuous list, from the 15th century up to the present day. Yet among all the apothecaries mentioned snce the rise of Quakerism in the 1650s, very few appear to have been members of the Society of Friends.

In searching the records of the Society of Friends, both in the Central Records Office in Norwich and in Friends House in London, I have found scarcely any references to Quaker apothecaries in Norwich. This is more surprising in view of the fact that Norwich in the early days of Quakerism was the chief manufacturing city in England; there were about 30,000 inhabitants, and the city was of comparable importance with London, Bristol and York. During the periods of active persecution, because of their refusal to swear oaths, so that they refused to take the Oath of Allegiance, Quakers were unable to become freemen of those cities, and they tended to set up business in non-corporate towns. But there were still many of their members trading in London, Bristol and York, and there were certainly many Quakers in Norwich — quite the reverse. A local historian, Mr W. Ketton-Cremer, points out that "ever since their release from most of their disabilities by the Toleration Act, the Dissenting bodies grew in respectability and opulence. In Norwich they were able to erect such fine buildings as the Old Meeting House and the Octagon Chapel." But none of the wealthy and influential Norwich Quakers appears to have chosen medicine or pharmacy as their profession or business.

The Old Meeting House referred to was erected in Goat Lane in 1679. There is still a Quaker Meeting House in Goat Lane, but it is not the original one. That was rebuilt in 1826, and is still a Quaker Meeting House. Meanwhile, in the early days of Quakerism in Norwich, the Friends bought a piece of land called Gildencroft, or Buttercup Field, for a burying-ground, and it was by the side of this that a second Meeting House was built in 1698. That old building was destroyed by fire during the Baedecker air raids in 1942. It was rebuilt in 1958 and the present building still belongs to the Society of Friends. It is leased to the N.C.C. for use as a Day Centre, but there are still Quaker meetings and festivals held there from time to time. The burial-ground still exists, and contains many tombstones of the Burneys and other Quaker families.

Although the actual Quaker apothecaries and doctors seem to have been few, there were, owing to what Drs Whittet and Burnby have so aptly called "the ramifications and intermarriages of the Quaker families", and Dr Burnby has called elsewhere "The ramifications of the cousinage", numerous links between the Norwich Quakers and some of the best-known Quaker apothecaries, doctors and pharmaceutical companies. It is with some of those relationships that I propose to deal first in this paper, and later to mention those Quaker apothecaries in Norwich of whom I have been able to find records.

I am not proposing to detail again the principles and practises of Quakerism, except where they have a direct bearing on the subject in hand. I have already published or read many papers in which those principles were set out, as have many other pharmaceutical historians.

First then, the links with the Gurneys, whom Augustus Hare has called "The leading Quaker family of England". The Gurneys claim direct descent from an ancient Norman barony, that of de Gournay — the word, meaning "a muddy place", is found spelt in both ways in different documents, but the accepted spelling became, and still is, Gurney.

The first Gurney to become a Quaker was John Gurney, of the 'Three Pigeons", Norwich. John came to Norwich in 1677, as a young man, from Maldon, in Essex, where he was born in 1665. His great-grandfather was a merchant, Henry Gurney of Great Ellingham Hall, and it has been suggested that John came to Norfolk to seek out his rich relations, but by the time John arrived Henry was long since dead, and there were no Gurneys left in Norfolk. John became an

*A paper given at the Spring Conference, Norwich April 11-13

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admirer and disciple of George Fox. He joined the Society of Friends, and in 1683 he was sentenced to three years imprisonment in Norwich gaol for refusing to take the Oath of Allegiance. After his release, he finished his seven years' apprenticeship with a cordwainer, (tanning, curing, buying and selling leather) and set up his own business as a merchant. He married, in 1687, Elizabeth Swanton, and they moved to a large house in the centre of the city "at the sign of the three pigeons", where they lived and also ran the business. John became an eminent city merchant and financial adviser to Sir Robert Walpole, who had estates nearby.

Of John's eight sons, four lived to grow up. Of those four, two, John and Joseph, provide links with pharmacy.

The eldest, John, born in 1688, became known as "The Weavers' Friend", because of his interest in the welfare of the workers in the wool industry, In 1789, he married Eliza Hadduck, heiress to a large piece of land at Little Barningham. Here, at Little Barningham Manor, their two sons, John and Henry, were born. Henry and John, when they grew up, were in business together as merchants and bankers, and eventually opened the first Gurney's Bank. Henry married Elizabeth Bartlett, daughter of our old friend Benjamin Bartlett, apothecary of Bradford. Elizabeth and Henry had one son, Bartlett Gurney, and six daughters. Bartlett inherited Gurney's Bank, and was the first of the Gurneys to leave the Society of Friends. He married twice, but died childless, in 1803.

Benjamin Bartlett of Bradford was a prosperous apothecary and bookseller and one of the foremost citizens of Bradford, where he owned a great deal of property. His first wife, Bridget, died in 1704. Nine years later, in 1713, he married Elizabeth Green of Liversedge. They had two children, Elizabeth, who married Henry Gurney, and Benjamin who became an apothecary and inherited his father's business. He married Martha Heathcote, and their son Benjamin Newton Bartlett was born in 1745. Benjamin 2nd died in 1787, and the following year, Benjamin Newton died, young and unmarried. According to a paper by Professor Rowson, "he was burnt to death in the bedroom of an inn, while in an intoxicated condition." Benjamin was the last of the Bartlett family, and so their considerable wealth passed to his cousin, Bartlett Gurney of Norwich.

Returning now to Bartlett and Benjamin's great-grandfather, John Gurney of the "Three Pigeons":- John's second son, Joseph, married, in 1713, Hannah Middleton, daughter of Joshua Middleton of Darlington. Hannah was tall and slim, with fair wavy hair "tucked almost out of sight under her simple muslin bonnet". She was said to have been so beautiful that she was known as The Fair Quakeress. Joseph was a Norwich merchant like his father, and began business in an old house surrounding a courtyard at the back of Magdalen Street. Later, in 1747, he bought an estate at Keswick, near Norwich, thus founding the Keswick branch of the Gurneys. Joseph and Hannah had ten children, of whom only four lived to grow up. The eldest of these, "Young Hannah", married twice, her second husband being Timothy Bevan of Plough Court. Timothy was the younger brother and partner of Sylvanus Bevan, founder of the Plough Court pharmacy which became Allen and Hanbury's.
Timothy was a rigid Quaker, and has been described as "saturnine and aloof". Cripps describes him as austere and low-spirited, probably owing to ill-health. He was thin, of medium height and sallow complexion. He wore a white wig, and as it was the custom of every Plain Friend to choose a sober colour and stick to it, he always wore light drab. He had a house in Hackney, where expensive comfort combined with the Quaker dread of worldly show. Timothy married, in 1735, Elizabeth Barclay of Cheapside, by whom he had two sons, Timothy and Sylvanus, and a daughter Priscilla. Elizabeth died in 1745, and in 1753 Timothy and "Young Hannah" were married. After the death of his brother Sylvanus, Timothy took into partnership the two sons of his first marriage, but in 1767 Sylvanus left to become the first chairman of Barclay's Bank, and in 1773 his brother Timothy died. Their father carried on the Plough Court business alone until 1775, when he retired and handed over the business to the son of his second marriage, Joseph Gurney Bevan.

Joseph Gurney Bevan, known to the family as "Joe", was in his youth a rather frivoulous young man, fond of bright clothes, literature and the arts. Cripps describes him as "of lively and affectionate disposition and very quick to learn". He took lessons from an uncle who was an artist and naturalist, and from a physician who was a classical scholar with a taste for poetry. Later, however, he returned to the plain dress of the Quakers in deference to his mother's wishes, and in later years he was regarded as a most solid and disciplined Friend. When he took over the Plough Court pharmacy he continued all the Quaker traditions inherited from Sylvanus and Timothy. He refused to supply anything but the best quality drugs, and for good payment. He demanded prompt payment, but, like all the Quakers, he had a horror of going to law, even to recover a debt. He wrote a great deal, including several Quaker biographies, and was editor of a small Quaker journal called "Piety Promoted". During the Napoleonic Wars he refused to supply drugs to armed vessels but he served in London as a special constable and "was extremely particular in fulfilling all the disagreeable duties, even to attending executions. He used to pursue his classical studies at the station house, many Greek books being sent there for midnight reading". He also had strong views against slavery, and would wait years to recover a debt rather than accept money raised by selling negro slaves.

But there was still a lighter, more human side to Joe Bevan's character. When he came to Norfolk he stayed at Keswick, and there are several references to him in Gurney family histories and journals, as a young man exchanging light-hearted banter and jokes with his Gurney cousins, and later as confidante and friend in various family crises. He was also the chronicler, in verse, of some family events. He was said by William Allen to possess the faculty of sympathy in an eminent degree. In 1776, Joe married Mary Plumstead, but they had no children, and in 1794 Joe retired from the Plough Court business at the early age of 40, with "a diminution of capital and impaired health". He died in 1814, aged 61.

To return now to the Gurneys, and Joe Bevan's grandfather, Joseph of Keswick. Joseph's son "Johnny", brother of Joe Bevan's mother, "Young Hannah", married Elizabeth Kett. Elizabeth was a direct descendant of Kett the Rebel, instigator in Norwich of Kett's Rebellion. He was hanged in

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chains from Norwich Castle in 1549. Their name was pronounced Kit, originally Le Chat, and Elizabeth was known as Bit Kit. Their second son, called "Johnny-for-Short", was the first of the Gurneys of Earlham. "Johnny-for-Short"was another Norwich merchant and small-scale banker. In 1775 he married Kitty Bell of Stamford Hill, daughter of Daniel Bell, coal merchant, and Catherine Barclay. Daniel's cousin Jacob Bill married, in 1771, Sarah Sheppard, and their son John, born in 1774, was the founder of Bell and Croyden's. Kitty Bell's sister Charlotte married Capel Hanbury, and was the mother of Cornelius and Daniel, of the Plough Court pharmacy.

"Johnny-for-Short's" profession at the time of his marriage to Kitty Bell, was listed as a wool-stapler and spinner of worsted yarn, but later, in 1803, he became a partner in Gurney's Bank. He began his business and married life in Magdalen Street, but in 1876 he took a lease on Earlham Hall, which was to become the family home of that branch of the Gurneys for many years. It was said that the Quakers preferred to rent rather than buy property, because "it was thought that the heart would be more firmly fixed on things eternal if living between hired walls, and less likely to glory in earthly possessions". Earlham was a large country house about three miles out of Norwich city, surrounded by a considerable estate of gardens and parkland. Since 1925 it has been the property of Norwich City Council, and the site of the University of East Anglia, and the Hall itself now houses the University's Faculty of Law.

It was here that "Johnny-for-Short" and Kitty brought up their eleven children, though Kitty died when Daniel, the youngest, was only 18 months old, and the family was thereafter cared for by the eldest, Catherine, then 16½. "Johnny-for-Short" and Kitty were not strict Quakers, though Johnny insisted that his family attend the Goat Lane Meeting House every Sunday, and he himself always attended the Yearly Meeting in London. But the children were encouraged to enjoy music and dancing and to mix with friends of all denominations. One of his daughters, Betsy, became a very strict Quaker from the age of about 18. Betsy married Joseph Storrs Fry of Plashett, Essex, and was later to become almost world-famous as Elizabeth Fry, prison visitor and reformer. Joseph was the youngest son of William Storrs Fry of Mildred's Court, London, and of Plashett, and is described in most records as a tea-dealer.

Perhaps surprisingly, the Gurneys' family doctor was not a Quaker. Dr Jemmy Alderson of Colegate Street, Norwich, was a constant visitor to Earlham, not only as the family physician but as a close friend for many years. In 1778 he was "treating the family with purges, rose water, endless mixtures and ointments, rhubarb pills, extract of lead and all kinds of juleps, emulsions, liniments and decoctions. There was a mixture for the nurse and powders for the butler — Hardly a week passed without medical attention. His total bill for the year was £15.2s.

Dr Alderson's only child, a daughter, Amelia, became a great friend of the Gurney children. Amelia was a very flamboyant character who loved music and dancing and writing novels and plays, at which she was very successful. After her father's death, Amelia herself became a Quaker, but "after her own fashion, with silken gown and elaborate printed writing paper, illustrated with silhouettes". It was at Earlham that she frequently met her future husband, John Opie, a Cornish painter brought to Norfolk by John Crome, founder of the Norwich school of Painting. The well-known portrait of William Allen, presented to the Pharmaceutical Society by Jacob Bell, was painted by H.P. Briggs. Briggs was a cousin of Amelia Opie, and was admitted to the Royal Academy at an unusually young age, probably by the influence of John Opie. There is nothing to prove that either Briggs of John Opie was a Quaker, but Briggs was a friend of William Allen, and Jacob Bell was the executor of Brigg's will.

Another friend and frequent visitor at Earlham Hall was the famous Quaker physician and philanthropist, Dr John Fothergill. Fothergill was apprenticed to Benjamin Bartlett, and so was doubtless acquainted with Bartlett's daughter, Elizabeth Gurney of North Barningham. He was associated with the Barclays and Bevans in many social and philanthropic projects. He published many medical works, including his famous "Treatise on the Malignant Sore Throat", and is said to have advised "Johnny-for-Short" in the illness from which he suffered for some months, before his marriage to Kitty Bell. Fothergill was a keen botanist, and into his famous and beautiful botanical garden at Ham House, Upton, Essex he introduced plants and trees from all over the world, as well as shells and fossils. Kitty Gurney consulted him when he came to Norfolk, and Fothergill advised her to plant wild plants brought in from the common, to teach the children some botany and perhaps a little Latin. When Fothergill died, his house at Upton was bought by James Sheppard, the husband of Sarah Gurney, daughter of Elizabeth Bartlett and one of Bartlett Gurney's six sisters.

Before leaving these links, and passing on to the actual Norwich Quaker apothecaries, there is one other, unconnected with the Gurneys, which should be mentioned. In the early days of Quakerism, in the latter part of the 17th century, Richard Ransom, a miller, of North Walsham, "bore a zealous and faithful testimony for Truth, for which he suffered 15 years imprisonment in Norwich Jail and the despoiling of his goods". This Richard Ransom, who must have been in prison at the same time as John Gurney, was an ancestor of William Ransom of Hitchin, the founder of William Ransom & Sons Ltd., manufacturing chemists, herb growers and distillers, of Sun Street, Hitchin. When I wrote about Ransoms some years ago., this company was still a family business, but I don't know whether that is still the case.

Of the actual Norwich Quaker apothecaries, probably the most noteworthy is John Sims. The first John Sims mentioned in Quaker records was a tailor, grocer and shopkeeper in Canterbury. He lived from 1655 to 1735. His son, John Sims 2, was born in Canterbury, went to London, and served an apprenticeship with a brassfounder in Houndsditch. In 1721, he married Ann Ollive. They had six children, of whom one, John Sims 3, born in 1737, commenced business as a watchmaker, but is mentioned in 1788 as a chemist and druggist at Yarmouth. He died at Norwich in 1822, at the age of 91, "most likely at the house of his son, John Sims 4", who was a chemist and druggist in Norwich at that time. This John Sims 3, son of John Sims and Ann Ollive, had a large family. One of his sons, Ollive Sims, born in 1761, went to Stockport in 1786 and commenced business as a chemist and druggist in Lower

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Hillgate, on the site of the former Bull and Mouth Inn. In the same year he was admitted into the Stockport Society of Friends. Sims prospered and, true to his Quaker traditions, "by his business methods and uprightness soon gained the esteem and confidence of the town". One of his apprentices was Luke Howard, founder of Howards of Ilford.

Sims was a rigid Quaker. He wore buckled low shoes, knee-breeches, a coat of peculiar colour and shape, and the broad-brimmed hat which had become the badge of the Quakers. He attended Meeting for Worship every Sunday at the Meeting House close to his shop, which John Dalton described as "the most elegant little Meeting House that can be conceived; the walls and ceiling perfectly white, the wainscot, seats and gallery all white as possible; the gallery turned off at each end in a serpentine fashion; a white chandelier; the floor as smooth as a mahogany table and covered with light red sand".

Ollive Sims married Sarah Phipps at Yarmouth in 1788. Their eldest son, another John Sims, born in 1792, gained his M.D. at Edinburgh, then went to London to practise as a consultant physician in Cavendish Square. He was especially noted for his treatment of fevers, but in 1838, it is said, "he himself succumbed to such a malady", and died, aged 46. This John Sims married Lydia May, daughter of a surgeon, Edward Curtis May, and their son, William Dillwyn Sims, became a partner, when his uncle Charles May retired, in the Ipswich firm of Ransom & May, manufacturers of agricultural machinery.

Ollive Sims' second son, Samuel, succeeded to the business of chemist and druggist in Stockport. He took into partnership Alexander Henry Shaw, the business being then known as Shaw & Sims. It was later taken over by Kay Bros., then by J.C. Arnfield & Sons, and finally by James Woolley Sons & Co. Ltd., of Manchester, which company later became a subsidiary of B.D.H.

To return to John Sims 3, chemist and druggist of Yarmouth and finally of Norwich — the father of Ollive Sims. Ollives's elder brother, John Sims 4, is described in the marriage register in 1792 as chemist and druggist in London Lane, Norwich. His children were Mary and Elizabeth, born in 1795, another Ollive, born in 1800, and another John, born in 1803. The business appears in the Norwich directories in 1803, but in 1810 as Squires (late Sims). In that year also appears Sims & Pitchford of Elm Hill, wholesale druggists. Mr Coleman stated that one assumes that Sims sold his business in London Lane to Squires, and went into the wholesale business.

It is possible that Pitchford was also a Quaker. In the 1790's, about 20 years earlier, young John Pitchford, son of a Roman Catholic surgeon of Tombland, Norwich, was a great friend of the Gurneys of Earlham, and it is said that his interest in botany led him there. His father, the surgeon, had settled in Norwich in 1769, and Hare tells us that his learning as a botanist led to his being welcomed as a guest at Earlham, whither he was first accompanied in 1797 by his son John, who was working in a laboratory at Norwich. Hare says that John Pitchford settled at or near Bow as a manufacturing chemist, and often visited Samuel Gurney at Ham House. But since Sims & Pitchford first appeared in the directory in 1810, it is reasonable to suggest that he may have returned to Norwich and become a partner with Sims.

Another Norwich Quaker who became an eminent pharmacist was Octavius Corder. Corder was born in 1829, and in 1843 he was apprenticed to Thomas Knott of Exeter. After qualifying from the newly-established School of Pharmacy in Bloomsbury Square, Corder became an assistant to Robert Alsop of Sloane Square, and possibly later to a pharmacist in South Shields. He moved to Norwich in 1865, and went into business in partnership with Albert Jarman Caley, who had established his pharmacy at 31 London Street in 1860. In 1873, Caley left, to develop his mineral water business and later his chocolate factory. That was sold in 1932 to J Mackintosh & Sons Ltd., and now belongs to Rowntree-Mackintosh.

Meanwhile, Octavius Corder continued in the business in London Street, where he remained for 45 years. Corder was a member of the Council of the Pharmaceutical Society for almost ten years, 1895 to 1904, and for 20 years a member of that Society's Board of Examiners. He was President of the meeting of the British Pharmaceutical Conference at Nottingham in 1893, when his presidential address proved to be a careful review of botany as a science. Corder's hobby was botany, and he had a beautiful garden at Brudall, where he cultivated many rare plants. He made many journeys to the Continent and returned with numerous uncommon plant specimens, some of which he sent to Kew. He was always seen with a flower in his buttonhole. Corder died in 1910, at the age of 81; his obituary in the *Pharmaceutical Journal* stated that "he will be much missed in the city, and his old apprentices now in business for themselves, will regret the passing of one to whom they owe in a large measure their knowledge of pharmacy and allied sciences".

I have two references in Quaker records to the Cubitts. There is an assignment of a lease to George Cubitt in 1731, and another in 1879 to Charles Cubitt, of a messuage and shop in the occupation of Charles Cubitt, chemist and druggist. In the 1810 Norwich Trade Directory appears the name of Mr. Cubitt, chemist, in the Upper Market. Cubitt was a founder member of the Pharmaceutical Society in 1841, and as his name appears in the above records of the Society of Friends, it is reasonable to suppose that he may have been a Quaker.

There was a Quaker surgeon, Nathaniel Northan, practising in Norwich in 1757, and in 1778, Edward Oxley, a Quaker surgeon, of Norwich, married Phoebe Ransom of North Walsham. Another Edward Oxley, druggist, of Sudbury, Suffolk, son of Edward and Phoebe, married Agatha Ransom in 1810. There is also a reference in Quaker records to David Catlin, watchmaker and druggist, in 1778, and to Thomas Dixon, surgeon, in 1802.

But perhaps a fitting end to this talk is the account of his experiences in Norwich left by Henry Lampe, a Huguenot refugee from the Continent. Henry studied medicine at Leyden, but did not take his degree. He went first to Cologne, where he made friends with a French refugee, and was persuaded by him to come to England. Here is the rest of Henry's story, in his own words, taken from his Autobiography, now in the library of the Society of Friends:-

"The Frenchman was a perfumer by trade, which being somewhat related to the apothecaries business, he persuaded me to set up an apothecaries shop, offering to sell some perfumes also; this we did at Norwich, taking in another partner, a Frenchman who was a physician. I was the main

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prop and pillar of the league, both in purse and capacity. We set up in Norwich as aforesaid. The perfumer did the main drudgery, because he was the weakest scholar and little serviceable in other respects. The doctor learnt it pretty fast, but the perfumer could never reach it right. But one way or another we got into the business; the neighbourhood proved kind by letting us have their money, inasmuch as we made a pretty good livelihood. The perfumer was our cook and housekeeper, to dress meat, clean the house, and make bedds; washing we hired out. But after a few years the doctor married, and by the instruments of his wife and her relations, endeavoured to throw us two off, and get the business wholely into his own hands. By his undermining and deceitful ways, he made *me* weary of the place and got the perfumer to remove, so we parted for a small consideration which he gave me. It was in that city that I first took notice of and was taken notice of by, the people called Quakers. I slipt sometimes privately into their assemblies. I approved them and had I stayed longer in that city I should have seen further in a little time. But removing from thence hindered my growth and darkened my sight again''. Henry went to London in about 1688, and then to Canterbury, where he did become a Quaker. Later he opened an apothecary's shop in York, then moved to Ulverstone, where he died in 1711, ''well respected as an apothecary and doctor''.

No Better Float Through Posterity

A unique institute for the history of medicine, was how Professor G.R. Paterson described the Hannah Institute for the History of Medicine, during an evening meeting of the Society on May 6. He said Jason Albert Hannah (1899 — 1977) was a truly remarkable man who had two great concepts in his life. The first of these, prepaid medical care, led to the founding by him and four colleagues, during the great depression, of Associated Medical Services, Inc., whose non-share, non-profit charter was granted by the Government of the Province of Ontario, April 9, 1937. The second of Dr. Hannah's great concepts, namely that the extensive reserves accumulated by the corporation by the time the federal and provincial governments ended A.M.S. involvement in health care on 1 July, 1972, should be used largely in promoting history of medicine.

Professor Paterson who was Dr. Hannah's assistant from October, 1974 and became Executive Director of the Hannah Institute from July 1, 1975, said that before the governments relieved A.M.S of its patient responsibilities provincial law gave the corporation two options; to wind-up and in doing, turn all assets over to the general treasury of the province; or to utilise the funds accumulated for some worthwhile endeavour on behalf of medicine and compatible with the charter of A.M.S. The first option was not acceptable to Dr. Hannah, or indeed to medicine as a whole, so the A.M.S. Board looked for a way or ways to use the funds on behalf of the profession.

A silver anniversary of A.M.S. was to occur in 1962 and Dr. Hannah was already thinking of a memorial to his role in the pioneering venture. Also in the early 1960's, there began his long succession of serious illnesses. His ill-health gave impetus to his hopes of 'going down in history'.

There was no clear-cut choice for his memorial in the early 1960's.

Early subjects discussed included closed panel clinics (for which a Medical Centre Research Reserve was established by Board), and clinic hospitals as well as a specific endowment to Queen's University (Dr. Hannah's *alma mater*). This latter idea provoked two further thoughts that ultimately became more important. The first of these was the probable need of Supplementary Letters Patent to provide for an orderly distribution of A.M.S. assets that would provide for the profession, should for any reason A.M.S. be forced to wind up its operations. The second provided the first mention, in A.M.S. records and archives or in the Hannah diaries, on the subject of history. Dr. Hannah evidently raised the subject of a medical historical museum at his *alma mater* but later these discussions were not successful for the Principal had to point out the proposed grant was insufficient to construct a separate and self-contained medical library.

The A.M.S. Board, prodded by its Managing Director, in 1964-5 amended the Constitution and By-laws to read:

> 'Should A.M.S. for any reason be wound up, all its remaining assets after payment of all debts and liabilities, shall prior to dissolution be distributed or dispersed of to promote medical education in the Province of Ontario; distribution of such remaining assets shall be made in such manner and amounts to such medical schools in Ontario and in such ratio to each of them, as the Board of Directors of A.M.S. may in its sole discretion deem advisable, prior to such distribution being made.'

In the next year, the phrase 'medical schools' was changed to read 'institutions' and the clause was duly proclaimed in the *Ontario Gazette*.

Between 1966 and the decisive events of 1971, many diversification projects were discussed by Board after investigation by Dr. Hannah and his Chief Medical Officer, Dr. Boyd Upper. These included the possible buying of several existent clinics, a drug plan (it was later established, but proved to be a money-loser), purchase of a drug company and/or the Connaught Laboratories, the billing of medical services provided to the community by university-attached physicians and the provision of library services to Ontario physicians. It is the latter which provided the impetus for the Hannah memorial.

In 1968 Dr. Hannah visited a brother who lived in a small town south of Vancouver. On his way home through Vancouver, he visited the Point Grey campus to see a former AMS employee who transferred to Vancouver to work for the University's Department of Alumni Affairs. While the two were talking in the access area to the beautiful Woodward Library (Dr. Hannah was being given a tour of a campus highlights), Dr. Hannah gazed at the magnificent entrance to the Library. Then he burst out, ''How much did this cost? I want one of these.''

The minutes of the Board meeting of 15 December, 1968, recorded another interesting development in these words,

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"Dr. Hannah indicated another approach to the Medical Library question has come up for consideration. The need for a good Central Library in Canada is becoming increasingly apparent with good communication facilities with other libraries. The establishing and management of a Foundation for managing a central library may be a better approach than making contributions to a library at Queen's, Western or Ottawa Universities" Dr Hannah was left to canvass the situation further.

In 1971, Dr. Hannah purchased 2002 volumes from the library of the Medical Society of London for £67,000. Thus he owned (or rather A.M.S. did) a rare book library. He had not yet decided where to put them. But he was beginning to speculate on associating them with an Institute for the History of Medicine. With respect to locating the library, he gave brief thought to the Woodward Library of the University of British Columbia, only to discard the idea because A.M.S.'s charter and financial reserves had originated in Ontario.

Nevertheless there were later negotiations to further the object of the Jason A. Hannah Institute for Medical History in the Academy but after a while Dr Hannah broke off the discussions and began talks with the Massey College in the University of Toronto.

"When one asks why the Massey College negotiations failed" Professor Paterson suggested "one has to conclude Dr. Hannah would not yield control of A.M.S. and its finances to another body."

It was clear Dr. Hannah was determined to be the head of the Jason A. Hannah Institute. "If academic requirements such as he did not possess were required for the Institute's director, then the Institute would have to change to permit him to be its director."

During the summer of 1972 Dr. Hannah purchased more books from the Medical Society of London. In September of that year Dr. A. L. Chute, chairman, Council of Ontario Facilities of Medicine (COFM) learned of the collection of historical medical books and of Dr. Hannah's desire to promote the study of the history of medicine. This led to the formation of a COFM committee to consider Dr. Hannah's proposals.

In June 1973 an agreement was signed between A.M.S. and the University of Tornoto and to deposit by gift. "The Hannah Rare Books Collection", by which name the purchases from the Medical Society of London and any future additions were to be known.

During the period October 1973 — January 1974, after protracted discussions in the COFM committee and the universities, agreements were signed for the establishment of five chairs for the History of Medicine. "For a well man to have accomplished all he had done by January 1974 ... would have been most remarkable. For a very sick man to have done all this surpasses belief. He had to be stubborn and obssesive and "have a mission." He did of course have the goal of writing his name in history. In this he undoubtedly succeeded."

Footnote

Professor Paterson is to publish a full account of the development of the Hannah Institute for the History of Medicine to coincide with the 50th anniversary of the granting of the original charter to A.M.S. in 1937.

A Note Concerning 'Dr.' Bateman and His Drops

The *Northampton Mercury or the Monday's Post* in April 1721 carried the following advertisement, "Eleanor Lamprey of Harberry near Warwick, having been upwards of Twenty Years afflicted with the Rheumatism in all my Limbs, do hereby declare that after having used several proposed Remedies in Vain I found immediate Ease and Relief by taking two bottles of Dr. Bateman's Pectoral Drops; sealed as in the Margin (a line drawing of a boar's head looking to the left) and sold by the Printers hereof." Bateman's Pecotral Drops were one of the most famous of the proprietary medicines, their sale continuing well into living memory, but their origins have for long been a subject of debate. This paper whilst not solving the problem, at least throws some new light on the subject.

The patent for the Drops, dated 31st. March 1726, was made out in favour of "Beniamin Okell, Chymist" but less than a month later the *London Journal* announced the grant of letters patent for 14 years in respect of the medicine, to Benjamin Okell (described as the sole inventor), John Cluer, William Dicey and Robert Raikes, "the persons concerned with the said inventor).[1] It is now well known that Cluer, Dicey and Raikes were stationers, printers and newspaper proprietors in Northampton and Gloucester,[2] but who was Benjamin Okell? Possibly he was a "chymist" as claimed in the patent, or perhaps as J.H. Young wrote in his *The Toadstool Millionaires* (p. 3) he was "a business man in league with a group of venturesome promoters with a warehouse and print shop in Bow Churchyard".

It is known that Okell was still associated with the printers as late as 1738 because there is still extant a sale document of "...four several messuages or tenements with their appurtenances..." in Goose Alley, st Mary le Bow by Francis Baker of Ware, Hertfordshire, gentleman, to Moses De La Haize, merchant. These buildings were in the tenure or occupation of William Dicey & Co., Benjamin Okell, John Rea and Eleazor Holdsworth.[3] The London Directories indicate that by the 1770s Okell's name in the partnership had disappeared to be replaced by that of another unknown person, Francis Beynon.

Recently it has been discovered that Benjamin Okell died intestate on 6 February 1743 aged 61, and that he is buried at Spratton, Northamptonshire. He had been married by licence on 8 February 1711 at Oxendon further north in the same county, when he had been said to have been of Brixworth.[4] The most significant piece of information however is that his bride's name was Elizabeth-Dorothy, elder daughter of Royle BATEMAN, MA, vicar of Spratton. Royle had been admitted sizar at Emmanuel College, Cambridge in 1668 and instituted vicar of Spratton on 29 August 1684 on the presentation of his father who had but recently bought the advowson.

The Batemans were of Thrapston, Northamptonshire, although until the 1680s the name was usually spelt Battman or Beatman. The vicar's parents were Dorothy and Michael Battman/Bateman, gentleman, and he was born to them in 1652 or 1653.[5] Michael Bateman died in 1695 and

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fortunately left a will thought it is not particularly informative, probably because he was not a young man and had already made most of his dispositions.[6] He bequeathed small annuities to two brothers and a sister which were to be paid out of the rent received from his son-in-law for "the farme and Bailiwick in Thrapston that I rent of the Rt. Hon. Earl of Peterborough". His son "Roily" who received no bequest was made the sole executor. The will is sealed with a fine blob of red sealing wax but unfortunately the design is difficult to delineate. It bears some resemblance to either a spread eagle or a butterfly but certainly not to a boar's head. There is no suggestion that any member of the family was either chemist, apothecary or druggist.

Many of the Batemans lived to a great age, Royle was 81 when he died in 1734, and his daughter Elizabeth-Dorothy Okell was 85 at the time of her death in 1766, but they did not have large families. Royle had only two daughters[6] and the Okells but the one child, Elizabeth, who was baptised at Spratton on 30 December 1717. Elizabeth married Francis Beynon of Surrey, and it is thus by this marriage that Beynon came to be a partner of the flourishing of William Dicey & Co.[7] There had been other children, Bateman, Francis-Okell, and Frances whose names show the family connections but they had died in infancy.

We still know little about Benjamin Okell. He was a subscriber to a number of books whose titles reveal that he had an interest in history and local topography, and also to Richard Neale's *A pocket companion for Gentlemen and Ladies* (published by John Cluer in 1724) which might indicate he was a self-made man with aspirations to move amongst his social superiors.[8]

Although the date of the patent is 1726, Dicey and Cluer's Northampton newspaper was certainly advertising the Drops as early as 1721 with the suggestion that the medicine had been for sale for some years. It is still unknown who developed the original formula, possibly it was Okell, but it would seem that he was indeed also an astute businessman who on his marriage into the Bateman family decided to make use of a famous name in the world of 'quack' medicine.

References

1. "Proprietaries of other Days", *Chem. Drugg*, 25 June 1927, p.835
2. J. Burnby, "Printer's ink and patent medicines: the story of the Diceys", *Pharm. J.*, 14 August 1982, pp. 162-163, 169.
3. Northamptonshire Record Office, YZ 8989. De La Haize paid £300 for the four buildings.
4. Northants. R.O. Longden Pedigrees.
5. The Thrapston parish registers and bishop's transcripts are both defective at this date, but a younger sister, Elizabeth, was born on 21st March 1656.
6. Northants R.O. Will of Michael Bateman of Thrapston.
7. Royle Bateman's younger daughter, Ann, married William Watson, clerk, of Swinshead Hunts. (sic) in 1719. He became Royle's curate and followed him as vicar at Spratton.
8. Francis Beynon died 12 February 1778 aged 62. His only surviving child, Elizabeth-Anne wife of Andrew Hackett of Warwickshire, does not appear to have inherited his share of the Dicey enterprise.
9. P.J. Wallis. "18th. century Medics."

J.G.L.B.

Letters

To the President and Members

I should like to express my thanks again for the presentation of the handsome and unique goblet which you made to me in Norwich to mark my ceasing to be a member of the committee.

This goblet will be a constant reminder of the friendships I have long enjoyed with you all. The engraving of the Society's badge with my initials makes the goblet a special personal gift Nothing could have given me such lasting pleasure.

Though I shall no longer be quite as active as formerly in the work of the Society I shall be happy to help in any way possible. The Society is so firmly established and recognised in the world of historical pharmacy that it cannot fail to flourish with a rising membership and the enthusiasm which you all bring to its organisation. Thank you all for your recognition of what I have enjoyed being able to do.

Leslie G. Matthews

Corrections:

It is regretted a number of errors crept into the article "A Family of Dorset apothecaries" in the June issue. In the second paragraph for "1065' read "1605"; penultimate paragraph insert after "member of the Bastard family", the words "famous in Dorset architecture. Their eldest son, again Sampson (1756-1792) was also".

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Contributions to the Editor: Arthur Wright F.P.S., D.B.A. · 36 York Place · Edinburgh · EH1 3HU

Contents

Diary Dates

1987

February 12
Mr J. G. Coleman "The Irish Society for The History of Pharmacy"

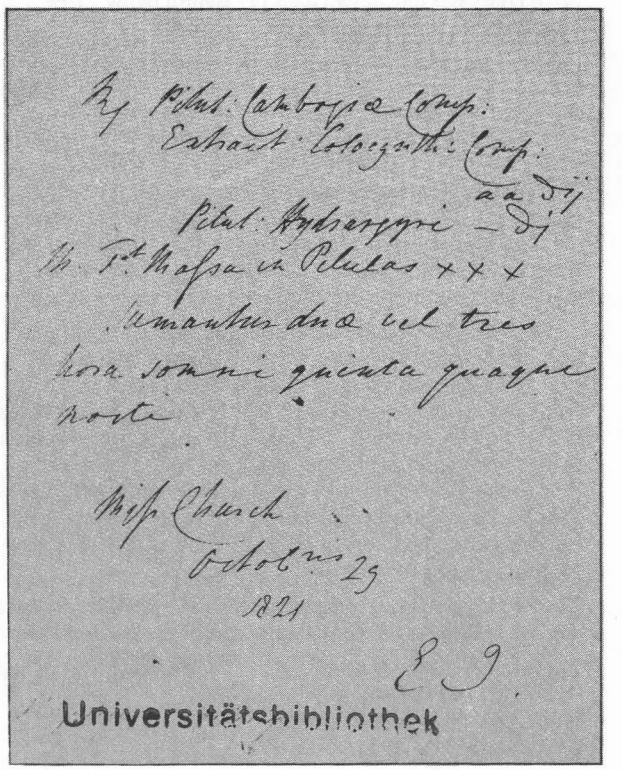
March 12
Foundation lecture, Dr W. E. Court, "The Green Pharmacists".

April 24-26
BSHP Spring Conference Cliff Tops Hotel, Shanklin, Isle of Wight. The tentative programme includes a series of varied lectures on "The Isle of Wight", "Chalybeate Springs', "18th Century Local Health Services" and the "Maynard Family of Apothecaries". Possible tours include one of the Isle of Wight and another of Carisbrooke Castle. Any member wishing to present a paper, short or otherwise is asked to contact the Secretary, BSHP 36 York Place, Edinburgh EH1 3HU.

May 21
Dr. C. Hillam. "History of Dentistry"

International Conference
The Congress of The International Society for the History of Pharmacy is to take place in Oslo, Norway June 23-26, 1987. The programme and details of the fees and hotel prices will be available during January from The International Congress, Norges Apotekerforening, PO Box 5070 — Majorstua N-0301 Oslo 3.

A Jenner Prescription
The Jenner Trust has acquired a copy of a prescription written by Edward Jenner. The quantities have been written in scruples, with the sign commenced from the bottom and continued across the top of the numerals in one continuous stroke of the pen. Not as usually drawn, downwards like a reversed 'C' followed by a separate horizontal stroke through it and above the numerals. The prescription was written by Jenner two years before his death, when 72 years old. Information on Jenner, the Jenner Museum and Conference Centre may be obtained from:- The Custodian, The Chantry, Church lane, Berkeley, Glos. GL13 9BH telephone (STD 0453) 810631. The Museum is open daily except Mondays from April to September.



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Medicine Labels of Russia 1908-1919

By R. Fayle

Following the custom, current in 19th century Germany, medicine labels in Russia were attached to the neck of the bottle after dispensing. Because of this loose attachment, it is obvious that the very great majority were destroyed or lost by the patient. Although the medicine formula (and other details) was written on the label, it would mean nothing to the patient, since it was always written in Latin (directions were sometimes written in Russian).

A collection of eleven Russian medicine labels, from medicines dispensed for Mr. TSANU (later Mr. SWAN), during the period 1908-1919 in Rostov-on-Don, was given by his son, Mr. V. SWAN (Alton, Hampshire), to Mr. Desmond Lewis, FPS, former Secretary and Registrar The Pharmaceutical Society of Great Britain, in June 1958, who has very kindly given the author permission to examine, reproduce, and to publish this material.

The Russian Pharmacy

The pharmacy was a very large building with probably about 30 staff (Richter appears to have had about 10 dispensers and students). They operated by "Royal Licence" (or "Privilege") and had a monopoly of the medical work in their large area — a pharmacy was allowed for each 12,000 population and 30,000 prescriptions (including repeats). A 24 hour service (usually with "night — bell") was operated. The assistants on duty slept in the store-room (or duty-room). The tour of duty was frequently 14-16 hours per day — two days per month being "free" days. A strike in September 1905 demanded:

Double shift working: Separate lodging: Not more than 8 night duties per month: 35 scripts per shift (for a days' work): Free time after duty; One month holiday; A warning to be given before dismissal, or wages in lieu: Situation to be held open for 3 Months in case of illness: Arbitration; Separate special "duty-room".

Pharmacists were exempt from payment of duties and taxes (as late as 1740), with free accommodation and 12 roubles per month salary. The pharmacies used the Royal Coat of Arms on all papers, seals, etc., and were not compelled to join Guilds, and were also admitted to Citizenship.

Until mid — XIX century, pharmacies were compelled to make all preparations used in their laboratories — which were large and well-equipped. A great amount of spirits (vodkas) was distilled and sold. Sale of spirits was forbidden in time of war. An "Official" price list was published (from 1854) by which all medicines and drugs had to be priced. Preparations and materials were purchased from the East and West merchants, warehouses, herb sellers, chandlers, and from local collectors of herbs. Glassware was obtained from factories in the Ukraine.

The ZEMSTVO (local authority Health Organisation) had a large warehouse (and a laboratory) in Elisabetgrad in 1890.

The number of pharmacies, etc., in Russia about this period (1900-1916) was as follows;-

1900------3456 1910------4523
1904------3757 1911------4700
1914------4791
(Urban...2633
Rural...2047: Pharmacy Depts...73;
Homeopathic...38)
1916------2354
(Urban...1404
Rural...950)
Number of Drug Stores 1915------7256
Number of Pharmacists 1914------10,5000
Number of Pharmacy Students------4,416
Number of people to one Pharmacy----34,200 (In European
Number of villages with NO Pharmacy---40,000 Russia)
Number of Scripts dispensed------32,412,972
Value of Scripts dispensed------32,001,653 roubles.
Average value of one script------ONE Rouble.
Average number of Pharmacists per Pharmacy--2.0

Examination of such a small number of labels can produce only speculative comments on the three Pharmacies.

The amount of business transacted and other figures must be regarded as "educated guesses", to be replaced by more accurate data, should any additional information come to light in later years.

RICHTER:
Turnover of scripts was approximately 14,500 (1911),
300 per week, employing a maximum of 8 dispensers;
38.412 (1918),
750 per week, employing a maximum of 20 dispensers;
29,068 (1919),
559 per week, employing a maximumof 16 dispensers.
This was indeed a very good business, making a total of 14,000, 38,000, and 29,000 roubles per year in scripts alone. The owner should be a rich man.

PROTOS:
Turnover of scripts was approximately 46,566 per year, 900 per week, employing a maximum of 26 dispensers. Value of scripts alone was 45,000 roubles. Another very rich man.

ELWORTHY LTD:
Scripts turnover perhaps (?) 1755 in 9 months (?).
This appears to be a series of numbered scripts for "Out-Patients."

Mr Tsanu (later Mr. Swan, senior) appears to have suffered great pains in muscles or joints from about age 26 (?). At the early age of 36 (?) these pains appear to have intensified and needed stronger medicines. The stomach also appears to have suffered. It is suggested that in his work as agent for Elworthy Ltd., dealing in agricultural machinery, the conditions were bad and the work heavy.

Royal Arms of Russia

These appear on six labels, and a large representation of them can be seen on the top of the Protos Pharmacy. They consist of a double-headed eagle with three crowns. The centre shield bears the Arms of Moscow (St. George and the Dragon), surrounded by a collar of the Order of St. Andrew. On the right wing of the eagle are shields for KAZAN (Basilisk), Poland (double-headed eagle), Taurida (double-headed eagles and shield), Kiev (Angle with sword and shield) — with Novgorod (two bears and tower) and Vladimir (lion). On the left wing of the eagle are shields for Astrakhan (crown and sword), Siberia (two lions rampant and crossed spears), Georgia (St. George and the Dragon), and Finland (lion rampant). In the CLAWS — the right claw holds a sceptre, the left claw, an orb.

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Label No 1

Description of Labels

In this list, all the written and printed material has been translated into English, except for script items, which have been left in the original Latin.

PROTOS — Label No. 1

(1) "NARYZHNOE" (external); To the prescription of Dr. of Medicine Dubouche (of Odessa). (2) Rostrov-on-Don. (3) Royal Arms. (4) 25:8:1908 (5) Engraving of Pharmacy (6) 1 rouble 20 kopeks. (7) Analytical Cabinet; Chemical Pharmaceutical Laboratory; Great Garden Pharmacy; No.29044; G.A. Protos; Sale Of Goods by the Druggist's Price List; Tel. No. 425.

ON REVERSE: Checked by — Provisor A.S. Babich: Prepared by.....?: Menthol 7.0, Methyl Salicyl 10.0, Lanolin 30.0.

Note: There is NO patient's name. The building on the label bears the name "R. Lachkovich" (twice) — perhaps the current owner of the "Licence" or Privilege" (by purchase or by inheritance). The board on the Pharmacy roof (reads): "Surgical and Proprietary and Cosmetic Goods".

Size of label. 210mm x 85 (45)mm. Black print on red paper.

RICHTER — Label No. 2

(1) Palace Pharmacy. No.5351. (2) Lessee A. Richter in Elisabetgrad. Price 1 rouble 15 kopeks. (3) "Mr. Tsanu" (now Mr. Swan). To be rubbed 3 times a day. To the prescription of "Not. Dr." Shtezin (?) 23:4:1911. (4) Royal Arms.

ON REVERSE: Acid.Salicylici, 6.0, 01.Eucalypti globuli, 5.0, Mentholi cryst. 3.0, Morphii Muriatici, 0.2, Ung Kali Iodati, 30.0.

Note: The margins of this label were folded back — and are printed — Bandages and Surgical Goods; Natural Mineral Waters. Oxygen. No Telephone Number. The Royal Arms are not clear, but is the standard form of double eagle with shields of various districts. Richter was a writer of the official history of Medicine and Pharmacy — not now accepted as wholly authentic. Size of Label: 220mm x 65 (30)mm.

Label No. 3

(1) Natural Mineral Waters. Oxygen. Palace Pharmacy. No.15020 (2) Mr. Tsanu (now Mr. Swan). Twice daily a tablespoon. To the prescription of Dni.Dris.Petrovski. 5:12:1911. (3) Lessee A.Richter in Elisabetgrad. 48 kopeks. Telephone 241. Dressings Patented and Surgical Goods.

ON REVERSE: Kali Iodati 6.0, Aq.Destillatae 180.0

Note: "Natural Mineral Waters" were "best sellers" of this period. Printer's name — (Lit.) B.Burtsdorfa, E-grad. Size of label: 242mm x 88 (44)mm

Label No. 4

(1) Palace Pharmacy. No.(none) (2) Mr. Tsanu (now Mr. Swan). Three spoons a day to be taken. To the prescription of Dni.Dris. (none). 28:11:1915. Telephone No. 241. (3) Lessee A.Richter in Elisabetgrad. 52 kopeks. (4) Royal Coat of Arms.

ON REVERSE: Checked by (name). Natri Salicylici 8.0, Kali Iodati 4.0, Aq.Destillat. 180.0. Margins of this label were folded back — and are printed — Bandages Patented and Surgical Goods. Natural Mineral Waters. Oxygen. Printer's name — (Lit.) B.Burtsdorfa, E-grad. Size of label 215mm x 75 (35)mm. Printed in dark green on pale green paper.

Label No. 6

(1) Natural Mineral Waters. Oxygen. (2) Palace Pharmacy. No.3537. (3) Lessee A.Richter. Two Roubles 15 kopeks. Tel No. 241. (4) Dressings Patented and Surgical Goods.(5) Royal Arms. (6) Mr. Tsanu (now Mr. Swan). Two pills at night. To the prescription of Dni.Dris. Yakimovich. 16:11:1918.

ON REVERSE: Phenolphthalini 2.0, Extr.Rhei Aq. 0.5, Podophyllini 0.1, Extr.Belladonnae 0.15; m.f.pilul.; No.20;

Note: No town given. Printer's name — B.Burtsdorfa, E-grad. Size of label: 180mm x 82 (30)mm

R.T.ELWORTHY, LTD. — Label No. 5

(1) Factory Hospital. No. (none). (2) Mr. Tsyanu (now Mr. Swan) — External — To the Prescription of Nob. Dr. Klimov — 20:9:1917. (3) Akts. (ionernoe) Obschch. (estvo) — Joint Stock Company R & T El'vorti in Elisabetgrad. (4) Top and bottom margins are blank, (5) Three large bottles of medicine, one small, one package (with labels attached to bottle-necks). (6) Royal Coat of Arms. (7) Serpent twined around tapering wide-mouthed jar; flowers and leaves.

ON REVERSE: Methyl Salicylici 30.0, Menthol 3.0, Chloroform 10.0.

Note: Straight edges, printed outline, curved on right.

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Label No 3

Printed in black or yellow paper. Possibly an ''out-paient'' department attached to a large factory, where ''hospitals'' were compulsory at that time — but few were functioning. Bottles have long labels attached to neck and stick-on labels on the front faces. No Telephone number. Size of label: 200mm x 75 (42)mm.

Label No. 8

(1) Factory Hospital. (2) Mr. Tsanu (now Mr. Swan). Three powders a day. To the prescription of Nob.Dr.....? (3) No. (none). 30:7:1918. (4) Joint Stock Company R & T Elvorti in Elisabetgrad. (5) Royal Arms, bottles, vase and snake, herbs.

ON REVERSE: Magister Bism 0.5, Salol 0.3, Pulv.Doveri 0.12; m.f.pulv., d.N.12; No telephone number. Size of label: 155mm x 70mm. Printed in blue on white paper, on design of a scroll, with a roller visible in the top R.H. corner. Paper oblong in shape.

Label No.9

(1) Factory Hospital. (2) Mr. Tsanu (now Mr. Swan). Twice a day, one at a time (?). To the prescription of Nob.Dr.....(Gaudenburg?) (3) No. 1755. 9:10:1919. (4) Joint Stock Company R & T Elvorti in Elisabetgrad. (5) Royal Arms (NOTE: ONLY CENTRE SHIELD — none on wings of eagle). Bottles, Vase and snake, herbs.

REVERSE: Aspirin 0.5, Codein, 0.02, Caffein Nat.Salicyl. 0.06; m.f.pulv.; d.t.N.6. No telephone number.

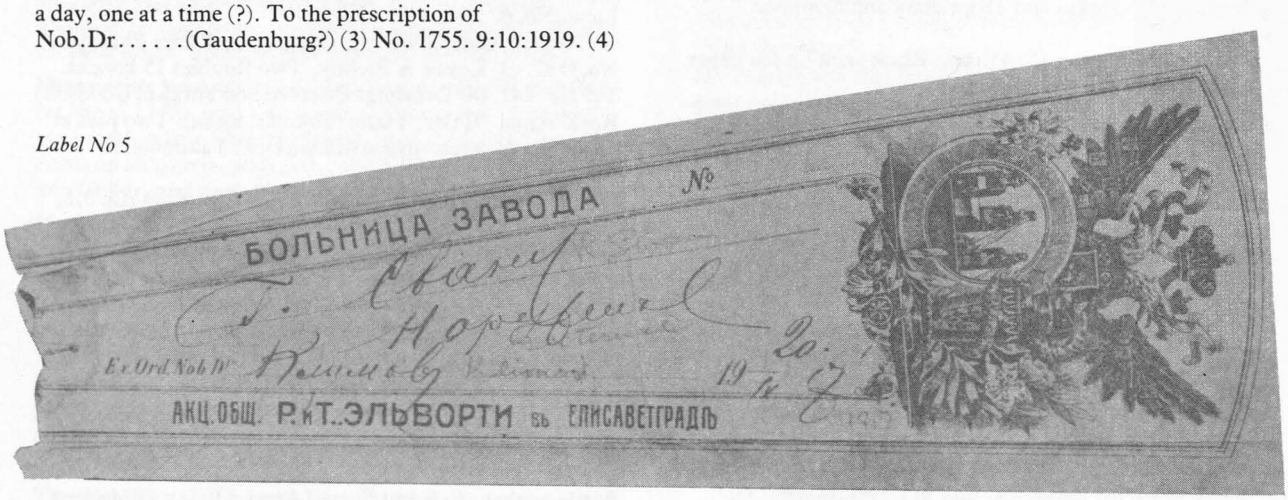
Note: Size of label: 155mm x 70mm. Printed in blue on white paper, on design of a scroll, with a roller visible in the top R.H. corner. Paper oblong in shape.

ACKNOWLEDGEMENTS

The Author acknowledges the valuable assistance of many individual works and organisations, including Soviet colleagues, in locating and obtaining material on the History of Russian Pharmacy.

Historical material and statistics are extracted from
Levinstein, I.I.
''Istoriya Farmatsii i Organisatsiya
Farmatsevticheskogo Dyela''
(Medgiz- Moscow. 1934)
Photos: By Alan Heath, Long Eaton, Nottingham.

Label No 5



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Label No 6

Remembering a Pharmaceutical Baron — Jesse Boot.

By Margaret Phillips

Tucked away on the road from St. Helier to the West, between that road and the sea, a small unaesthetic-looking structure seems quite unlike a church of any historic interest. St. Matthew's was indeed, built only in 1840. It was intended as a chapel-of-ease and an adjunct to St. Lawrence's parish church, to save parishioners the long walk and steep climb up Mont Felard, to worship at their parish church. It was as starkly functional inside as out.

But St. Matthew's established its right to attention, especially from pharmacists, when in 1934 it was re-dedicated, after the interior had been completely and uniquely refurbished at the instigation and expense of Florence, Lady Trent, in memory of her late husband, the first Baron Trent of Notthingham, known to millions as Jesse Boot, founder of the first chain of multiple pharmacies in Britain, and for many years a thorn in the side of most private chemists — a thorn which, indeed, pricks occasionally even today.

Jesse was not a pharmacist. His father, John Boot, was an agricultural labourer whose health was so poor that at the age of thirty four he could no longer stand such a strenous life. He moved into Nottingham, and started a business.

John Boot had no money or business experience, but his wife had a great interest in and knowledge of, herbs, so their first shop was a herbalists'. Mary was John's second wife. His first wife died after less than ten years of marriage, and their only child had died at the age of four. John then married Mary Willis, daughter of a book-keeper in the Notthingham lace industry, and with his help John and Mary opened, in 1850, a little shop in Goose Gate, Nottingham, for the retailing of herbs and folk medicines.

The rising interest in herbalism in England in the mid-19th century was mainly stimulated by an American Dr A I Caffin. One of Caffin's admirers and followers was a self-styled "doctor" John Skelton, who moved from London to establish a practice in Leeds. John Boot was greatly impressed and influenced by Skelton. John sold and advertised vegetable remedies; he held regular consultations, and undertook lecture tours in and around Nottingham. But his health continued to deteriorate, and in 1860 he died, aged only fortyfour, when Jesse was ten.

John's widow kept the business going, and when he was thirteen, Jesse left school to help her. As he gradually took over the shop from his mother, Jesse widened the range of good sold, to include household items and proprietery medicines.

In the early, 1870's people were buying fewer herbal remedies and more patent medicines, so in 1874 Jesse decided to enter the proprietary medicines business. He decided that if he could sell those at prices lower than those charged by the chemists, his future was more promising. Not being a pharmacist he was not asked to join the various associations formed by the Nottingham chemists, and so he was not bound by their price-maintenance agreements. He was free to under-cut them. By widely advertising his cut prices and concentrating on a small profit margin, high turnover and own-name products, he built up a flourishing business, and moved to larger premises.

Jesse's father had built up a network of country "agents", and Jesse continued and extended this. He also ran a mail-order service. His country "agents" led to the idea of establishing branch shops, the first of which were in Sheffield, Lincoln and Derby. At first they sold only patent medicines, drugs, groceries and sundries, but in 1883 Jesse converted his business to a limited liability company, and in 1884 he opened a dispensing section and employed his first pharmacist, Mr S. S. Waring, to manage. He soon followed suit with his branch shops. He still pursued the same policies. His prescription charges were lower than those of the private pharmacies, and presentation was of a high standard. In 1885, he established a manufacturing division.

Jesse worked a sixteen-hour day, and occasionally all

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through the night. His health inevitably suffered. In 1885, at the age of thirty six, he had a serious breakdown. He went to Jersey to recuperate, and there met Florence Rowe, daughter of a Jersey stationer. In 1886, they were married, and from then onwards Florence, who had been brought up in and understood retailing, took an active part in the business. It was her influence which was responsible for the development of the stationery, books and fancy goods departments and the Boots libraries and cafes.

Florence was a major influence in Jesse's life and work, and he always had a great affection for her native island of Jersey. He called his mansion in the Park, Nottingham, St. Helier's, after the island's capital.

After his marriage, Jesse returned to his business, greatly improved in health and spirits. The company continued to flourish and expand. In 1901, Boots Southern Company was formed. In December 1909, Jesse received a knighthood, and was later created a Baron, the first Baron Trent of Nottingham.

Boots first branch in Jersey was opened in 1986, in Queen St.reet, St. Helier, next door to Florence's father's bookshop, and the premises were amalgamated in 1908. The Boot family were noted both in Nottingham and in Jersey, for philanthropy, and memorials to them include playing fields, a youth centre, sports awards and prizes, and a public park and gardens.

Jesse had always been fond of the open air and exercise, but in his late forties he began to suffer from rheumatoid arthritis. He bought a house in Buxton so as to be able to take the Spa waters, but he gradually became more crippled, and by 1908 he had to take to a wheel chair. By 1918, he could scarcely move. In 1920, he decided to sell his controlling interest in the company. His son, John, became a director, but Jesse's authority virtually ceased. He retired to Jersey, where he died in 1931.

The Boot family home was the Villa Millbrook, in St. Lawrence's parish, close to St. Matthew's church, and soon after Jesse's death his widow offered to completely redecorate and refurbish the previously very utilitarian interior of the building, at her own expense, as a memorial to her late husband. A variety of stonework was introduced. The interior walls were reconstructed in Bath stone; the floor was paved with Portland stone; Dorset stone was used for the chapel floor; and the lectern and pulpit were of Hopton Wood stone, from Derbyshire. A new electric organ was built and installed by Brindley & Foster of Sheffield, and this was rebuilt in 1961.

The new chime of eight bells was the first of its kind to be installed in Jersey, and had many special features. The chime was controlled from a keyboard, and could be chimed in changes, or actuated to play a range of simple melodies. The biggest bell weighs 8 cwt, and the chime is on a diatonic scale, the bass bell being note B.) The Croydon firm who built the chime installed a similar one at Beclin Abbey, near Lille, France, which was the first English-built chime ever to be installed in France, According to Lempriere's History of Jersey, the Germans, during the Occupation, removed the bells from all the parish churches, leaving each church one bell only, but St. Matthew's appears to have escaped, possibly because it was not a parish church. It still has a chime of eight bells.

Pride of the redesigned church, however, was the wonderful glasswork designed and made by Rene Lalique of Paris. St. Matthew's is believed to be the only church which he decorated throughout. Rene Lalique was born in 1860, and trained in Paris and London. He first worked as a silversmith and jeweller, but in the 1890s he began to concentrate on glassware. His original pieces were made using wax models and plaster moulds, which were afterwards destroyed, so that each piece was unique, and few of these survived. Later, he started to manufacture lamps, vases and bowls, and in 1911 he won a contract from Coty to produce an exclusive range of perfume bottles. These little bottles are now highly prized by collectors.

Lalique had to suspend his work during the first World War, but between the wars his products enjoyed great popularity, and his best work, now most valued by collectors, is believed to be that produced in the 1920s and early 30s. During the second World War, his factory was extensively damaged, and in 1945 Lalique died, but his son Marc rebuilt the factory and continued the business, which is still in existence.
Although Lalique's early glass followed the lines of the Art Nouveau Period, his later designs were far more austere, relying for their effect not on colours but on the different textures produced by sand-blasting and acid engraving, and on contrasting opaque glass and clear; emphasis was concentrated on form and shape and on providing a luminescent effect. Most of his earlier work bears his signature, R Lalique, and this can be seen on the base of the glass font in St. Matthew's church. This glass font is believed to be the only one in existence.

As well as the font, the tall windows, the communion rail, and the huge glass troughs which house the ceiling lights are all of Lalique glass. There are glass screens, with a design of angels, hiding the sacristy and the lady chapel, and glass panels bearing angels in the main doors. Behind the altar is a massive glass cross let into the wall and visible from outside. Much of the glass is illuminated at night, and the great altar cross was intended to be floodlit at night to serve as a beacon for mariners. The glassware also bears a pattern of lilies, and both the Madonna lily and the Jersey lily can be distinguished in it.

Lastly, moving away from St. Matthew's there is another memorial to Jesse which is worth a mention, the lychgate at St. Brelade's church. St. Brelade's, standing in beautiful St. Brelade's bay, is the oldest church in the island, dating from before the Norman Conquest. The present building dates from about the 16th century, and the Fisherman's Chapel beside it is 14th century, with pebbles and shells in the walls and some recently-uncoverd frescoes. The lychgate of St. Brelades was built as a memorial to Baron Trent. If, after visiting it, you follow the narrow road which winds round the cliff to the left, to Les Cruex, you will come upon, on your right, a granite tomb, surrounded by iron railings. This is the last resting-place of Jesse Boot, the first Baron Trent of Nottingham, who built up, from an obscure 19th century herbalist's shop, a vast pharmaceutical empire.

The above is an abstract from a paper presented at the History of Pharmacy Session, British Pharmaceutical Conference, Jersey, September 24.

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18th Century Apothecary Apprenticeship Premiums

By F. H. Rawlings

Prior to 1711 the Bristol Apprentice Books record few instances of fees being paid for apprenticeship. From that date preimums paid were recorded in at least three quarters of the entries to the end of the century. No payment was recorded when a relative was taken as an apprentice, usually a son, but sometimes a brother or other relation having the same surname as the apprentice master. Sometimes, but not always orphans were taken without payment.

From 1760 a fee of between £10 and £30, would be paid by a charity e.g. "gift of the clergy and sons of the clergy in the City of Bristol" for a son of a deceased clergyman from outside the city. Bristol County Societies — Gloucestershire, Somersetshire and Wiltshire made donations for apprenticeship of orphans from their counties. Local charitable personalities made similar contributions.

Apprentices	1711-1724	1724-1740	1740-1760	1760-1764	1764-1777	1777-1787	1787-1798
Apothecary	56	88	70	11	38	13	15
Druggist & Apothecary		1wh.	4	1wh.	2		
Druggist	1		1	1	1	2	4
Chemist & Druggist	1						
Chemist	2					1	2
No premium paid:-	14	14	18	4	8	5	7
relation	6	8	6	1	5	3	2
orphan	3	2	4		2	1	1
other	5	4	8	3	1	1	4
Premiums:-							
paid for orphans	14	22	24	2	9	5	5
lowest premium	£20	£4/14/6	£10	£4	£10	£30	£20
highest premium	£105	£105	£150	£150	£120	£200	£210
average premium	£54	£68	£71	£66	£74	£93	£129
numbers paying:-							
£50	16	6	2	1	1	1	—
£100	1	14	13	—	6	1	1
£105	1	6	9	1	11	5	3

wh. = wholesale.

The table summarises the records of apothecary apprentices for each of the seven books covering the years 1711 to 1798. All the premiums were recorded in pounds; peculiar amounts such as £57.15s.0d — and £73.10s.0d made sense when converted to guineas, being fifty five and seventy respectively. In calculating the average of the premiums paid only records of premiums paid are included.

For comparison the premiums paid for other apprenticeships were examined for the year 1750. There were 172 records for premiums paid for sixty four with no record of any fee. The average premium charged was £35.

Below are listed all the premiums of £100 or more with the occupation of the father and the apprentice master:-

£315 by a merchant to a grocer.
£210 by a house carpenter to a merchant.
£350 by a distiller to a linen draper.
£100 by a mariner to an apothecary.
£105 by a gent to a surgeon.
£100 by a gent to an apothecary.
£100 by a merchant deceased to a surgeon.
£100 by a gent to a ?
£105 by a merchant to a tobacconist.
£300 by a sugar baker to a grocer.
£200 by a gent to a surgeon.

It is obvious, in some cases, the master charged what he thought the market would pay. This is also revealed by the increase in the average rate charged by apothecaries as the century progressed.

A tax of a shilling in the pound was levied by the Inland Revenue on the premiums charged from which charity payments were exempt. Records of the tax collected were made by the I.R. in London and these are now held in the Public Record Office. Comparison with the Bristol records reveal 245 apprenticeship premiums paid with only 124 equivalent records in the I.R. lists. Undoubtedly, there was tax evasion, but it is debatable if it was on this large scale. There are five runs, involving altogether sixty nine records, with consecutive records of premiums paid with no equivalents in the London lists. In all the other records the equivalent I.R. records are well scattered. This indicates a possible breakdown in communications between Bristol and London. If these sixty nine are added to the 124 equivalent records there are still fifty two records of premiums paid in Bristol with no equivalent tax paid records in London, a ratio of one in six unpaid.

I would like the acknowledge the help from Dr. J.G.L. Burnby in making available the Bristol records that she has extracted from the Public Record Office.

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Medicine Stamps

Further to 'The Medicine Stamp Acts of Great Britain', *Pharmaceutical Historian* Vol. 16. No 1. I enclose a photograph of stamps used to supplement the duty under the 1915 Act.

The problem arose that under the Act when it became operational old stock had to be sold at the new duty rates i.e. items with a 1½d Stamp Duty were then subject to the extra 1½d Duty.

The difficulty was overcome by the purchase from the Post Office of special overprinted 1½d stamps, as illustrated.

These unused specimens were found when clearing out Butler's old pharmacy in Old Market Street, Bristol in the 1950's. These premises were opened as a Chemist and Druggist in 1798.

F.H. Rawlings

Medieval Hospital Site

Brian Moffat and Gordon Ewart members of BSHP active in medieval archaeology in Scotland have set up SHARP (Soutra Hospital Archaeoethnopharmacological Research Project). Its aim is to investigate the site of a medieval monastic hospital (centred on Soutra Aisle — NT453585 — 24 km south-east of Edinburgh). It may well be on the site of the hospital chuch which stood on the medieval and fomer Roman Road. Pottery and ornamental stone have been turned out of the fields over the years by the plough. The opportunity is presented because the farmer, Mr A Matthewson, is putting fields under grass for the next few years and has offered permission for restricted excavation. This will be directed towards its and similar features, for the systematic recovery of the herbal and metallic content of the physical residues of medical treatments. It is anticipated that the details of actual treatments used over centuries in a Scottish hospital will be determined, and evaluated against the prescriptive texts. Support and help is being sought for the project. Further details are available from Dr Brian Moffat, 41 Grass Market Edinburgh EH1 2HS.

Child Care

Fourteen papers describing historical aspects of child care presented at the 10th British Congress on the History of Medicine, Swansea, April 1984 have been published in one volume "Child Care Through The Centuries". The wide ranging topics include:- The Child in Hospital; Child Abuse; Rickets and Scurvy; Infant Feeding and The Health of the School Child. The 232pp. paperback is available, price £10.60p from STS Publishing, Welsh School of Pharmacy, PO Box 13, Cardiff CF1 3XF.

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